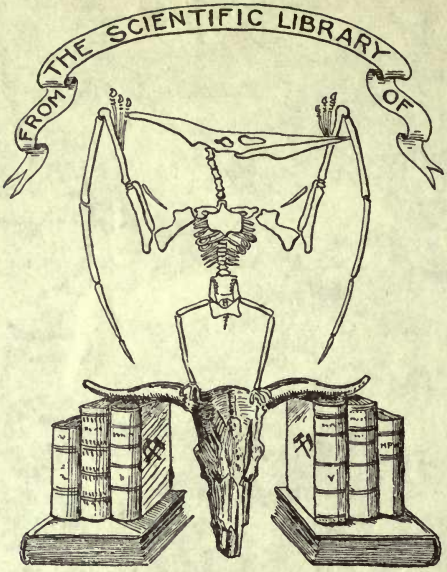
UC-NRLF
$B 345 130





WILLIAM DILLER MATTHEW

SIGILLVM · VNIVERSITATIS · CALIFORNIENSIS
LVX
FIAT
MDCCCLXVIII
EX LIBRIS

~~MATHEW LIBRARY~~

EARTH
SCIENCES
LIBRARY

PRESENTED

BY

The Trustees

OF

THE BRITISH MUSEUM.

CATALOGUE

OF THE

UNGULATE MAMMALS

IN THE

BRITISH MUSEUM (NATURAL HISTORY).

VOL. II.

ARTIODACTYLA,

FAMILY BOVIDÆ,

SUBFAMILIES BUBALINÆ TO REDUNCINÆ

(HARTEBEESTS, GNUS, DUIKERS, DIK-DIKS, KLIPSPRINGERS, REEDBUCKS, WATERBUCKS, ETC.).

By R. LYDEKKER, F.R.S.,

ASSISTED BY

GILBERT BLAINE.

LONDON:
PRINTED BY ORDER OF THE TRUSTEES OF THE BRITISH MUSEUM.

SOLD BY

LONGMANS, GREEN & CO., 39, PATERNOSTER ROW, E.C.
B. QUARITCH, 11, GRAFTON STREET, NEW BOND STREET, W.
DULAU & CO., LTD., 37, SOHO SQUARE, W.
AND AT THE
BRITISH MUSEUM (NATURAL HISTORY), CROMWELL ROAD, S.W.

1914.

(*All rights reserved.*)

INTRODUCTION

My labours in the preparation of the greater part of this volume have been much lightened by Mr. Gilbert Blaine, who has been good enough to examine, name, and catalogue the specimens in the Collection. In regard to the classification of the heterogeneous group of ruminants commonly included under the designation of "antelopes," it has been deemed advisable to follow the one adopted by Sclater and Thomas in *The Book of Antelopes*, with such minor modifications as are necessary in order to bring it, so far as possible, into accord with the emendations in regard to the position of certain generic groups and the limitations of subfamilies proposed by Mr. R. I. Pocock in his article on the Cutaneous Scent-Glands of Ruminants, published in the *Proceedings of the Zoological Society* for 1910.

In several cases considerable difficulty has been experienced with regard to the numerous local forms of African antelopes for which separate subspecific names have been proposed, as the specimens in the Collection are quite insufficient to afford a clue as to the value of the characters upon which these forms are based. When such forms are from more or less widely sundered localities they have, as a rule, been recognised as distinct; but in cases where several have been named from nearly adjacent, or even the same, districts, their right to distinction has not been definitely accepted, and the subspecific titles are merely entered *seriatim*, under the heading of the species to which they pertain. In all cases the responsibility for the recognition of such local races rests with the writers by whom the names were given, and not with myself.

As in the preceding volume, special prominence has been given to external characters, more particularly the horns, in

the definition of groups, in order to render the work more acceptable to sportsmen than would be the case if less easily appreciated features were given the first place.

The opportunity may be taken of correcting the following errors in the first volume :—

P. 81, last line, for *R. S. Günther* read *R. T. Günther.*

P. 102, line 6 from bottom, *for* 2. 3. 9. 8. *read* 2. 3. 9. 6.

P. 129, bottom line, p. 162, line 16 from top, and Index, pp. 243, 244, *for* Orthagoceros *read* Orthægoceros.

P. 160, line 10 from top, *for* 50 *read* $55\frac{1}{2}$.

P. 182, line 4 from bottom, *for* $7\frac{3}{16}$ *read* $7\frac{1}{2}$.

P. 184, line 2 from bottom, *for* $2\frac{7}{16}$ *read* $2\frac{3}{8}$.

R. LYDEKKER.

December 10*th*, 1913.

CONTENTS

PAGE

PREFACE iii

INTRODUCTION v

ORDER UNGULATA.

SUBORDER I.—ARTIODACTYLA.

SECTION A.—PECORA.

FAMILY I. BOVIDÆ 1

SUBFAMILY v. BUBALINÆ 2

I. GENUS BUBALIS 3

I. BUBALIS BUSELAPHUS 4

II. BUBALIS MAJOR 6

III. BUBALIS TORA 8

A.—Bubalis tora tora 10

B.—Bubalis tora digglei 11

C.—Bubalis tora rahatensis 11

D.—Bubalis tora swaynei 12

E.—Bubalis tora noacki 13

IV. BUBALIS COKEI 13

A.—Bubalis cokei cokei 15

B.—Bubalis cokei rothschildi 16

C.—Bubalis cokei nakuræ 16

D.—Bubalis cokei kongoni 17

V. BUBALIS NEUMANNI 18

VI. BUBALIS LELWEL 19

A.—Bubalis lelwel lelwel. 20

B.—Bubalis lelwel tschadensis. 20

C.—Bubalis lelwel jacksoni 21

D.—Bubalis lelwel niediecki 23

E.—Bubalis lelwel insignis 23

F.—Bubalis lelwel roosevelti 24

VII. BUBALIS CAAMA 24

A.—Bubalis caama caama 27

B.—Bubalis caama selbornei 27

VIII. BUBALIS LICHTENSTEINI 29

PAGE

II. Genus Damaliscus 32

I. Damaliscus pygargus 33

II. Damaliscus albifrons 35

III. Damaliscus lunatus 37

IV. Damaliscus korrigum 39

A.—Damaliscus korrigum korrigum . . . 41

B.—Damaliscus korrigum tiang . . . 42

C.—Damaliscus korrigum selousi . . . 44

D.—Damaliscus korrigum jonesi . . . 44

E.—Damaliscus korrigum jimela . . . 44

F.—Damaliscus korrigum phalius . . . 46

V. Damaliscus hunteri 46

III. Genus Connochætes 48

I. Connochætes gnu 50

II. Connochætes taurinus 54

A.—Connochætes taurinus taurinus . . . 56

B.—Connochætes taurinus johnstoni . . 57

C.—Connochætes taurinus hecki . . . 57

D.—Connochætes taurinus albojubatus . . 58

Subfamily vi. Cephalophinæ 59

Genus Cephalophus 60

1. Subgenus Cephalophus 63

I. Cephalophus sylvicultrix 63

II. Cephalophus jentinki 66

III. Cephalophus spadix 67

IV. Cephalophus natalensis 68

A.—Cephalophus natalensis natalensis . . 69

B.—Cephalophus natalensis amœnus . . 69

C.—Cephalophus natalensis robertsi . . 70

D.—Cephalophus natalensis bradshawi . . 71

V. Cephalophus centralis 71

VI. Cephalophus nigrifrons 72

VII. Cephalophus claudi 73

VIII. Cephalophus rubidus 73

IX. Cephalophus weynsi 74

X. Cephalophus johnstoni 75

XI. Cephalophus ignifer 75

XII. Cephalophus harveyi 76

A.—Cephalophus harveyi harveyi . . . 77

B.—Cephalophus harveyi keniæ . . . 77

PAGE

XIII. Cephalophus leopoldi 78

XIV. Cephalophus leucogaster 79

XV. Cephalophus dorsalis 80

XVI. Cephalophus castaneus 81

XVII. Cephalophus leucochilus 82

(?) Cephalophus emini 83

XVIII. Cephalophus ogilbyi 83

XIX. Cephalophus brookei. 84

XX. Cephalophus callipygus 85

XXI. Cephalophus rufilatus 86

A.—Cephalophus rufilatus rufilatus . . . 87

B.—Cephalophus rufilatus rubidior . . . 89

XXII. Cephalophus doriæ 89

XXIII. Cephalophus niger 91

XXIV. Cephalophus walkeri 92

2. Subgenus Guevei 93

XXV. Cephalophus (Guevei) maxwelli . . 93

XXVI. Cephalophus (Guevei) melanorheus . . 96

A.—Cephalophus melanorheus melanorheus . 97

B.—Cephalophus melanorheus sundevalli . 97

C.—Cephalophus melanorheus anchietæ . . 98

D.—Cephalophus melanorheus æquatorialis . 98

E.—Cephalophus melanorheus musculoides . 99

XXVII. Cephalophus (Guevei) monticola . . 100

XXVIII. Cephalophus (Guevei) nyasæ . . . 103

A.—Cephalophus nyasæ nyasæ . . . 103

B.—Cephalophus nyasæ defriesi . . . 104

C.—Cephalophus nyasæ congicus . . . 104

XXIX. Cephalophus (Guevei) hecki . . . 105

XXX. Cephalophus (Guevei) simpsoni . . . 105

XXXI. Cephalophus (Guevei) lugens . . . 106

3. Subgenus Sylvicapra 107

XXXII. Cephalophus (Sylvicapra) grimmi . . 107

A.—Cephalophus grimmi grimmi . . . 110

B.—Cephalophus grimmi flavescens . . . 112

C.—Cephalophus grimmi altifrons . . . 113

D.—Cephalophus grimmi splendidulus . . 114

E.—Cephalophus grimmi coronatus . . . 114

F.—Cephalophus grimmi campbelliæ . . 116

PAGE

G.—Cephalophus grimmi abyssinicus . . 117
H.—Cephalophus grimmi nyansæ . . . 118
I. —Cephalophus grimmi hindei . . . 119
J. —Cephalophus grimmi altivallis . . . 120
K.—Cephalophus grimmi shirensis . . . 120
L.—Cephalophus grimmi roosevelti . . . 121

XXXIII. Cephalophus (Sylvicapra) leucoprosopus . 121

Subfamily vii. Oreotraginæ 122

Genus Oreotragus 123

Oreotragus oreotragus 123

A.—Oreotragus oreotragus oreotragus . . 126
B.—Oreotragus oreotragus saltatrixoides . . 126
C.—Oreotragus oreotragus aureus . . . 127
D.—Oreotragus oreotragus schillingsi . . 127
E.—Oreotragus oreotragus somalicus . . 128
F.—Oreotragus oreotragus aceratos . . . 130
G.—Oreotragus oreotragus porteousi . . 130

Subfamily viii. Neotraginæ 131

I. Genus Ourebia 132

I. Ourebia ourebi 133

II. Ourebia hastata 135

III. Ourebia nigricaudata 137

IV. Ourebia montana 138

A.—Ourebia montana montana . . . 139
B.—Ourebia montana æquatoria . . . 140

V. Ourebia haggardi 140

VI. Ourebia kenyæ 141

VII. Ourebia microdon 142

VIII. Ourebia goslingi 143

IX. Ourebia cottoni 144

X. Ourebia gallarum. 144

II. Genus Raphicerus 145

1. Subgenus Raphicerus 146

I. Raphicerus campestris 146

A.—Raphicerus campestris campestris . . 149
B.—Raphicerus campestris natalensis . . 151
C.—Raphicerus campestris neumanni . . 151
D.—Raphicerus campestris stigmaticus . . 152
E.—Raphicerus campestris capricornis . . 153

PAGE

II. Raphicerus sharpei 153
A.—Raphicerus sharpei sharpei . . . 154
B.—Raphicerus sharpei colonicus . . . 155

2. Subgenus Nototragus 155

III. Raphicerus (Nototragus) melanotis . . 155

III. Genus Neotragus 158

1. Subgenus Nesotragus 159

I. Neotragus (Nesotragus) moschatus . . 159
A.—Neotragus moschatus moschatus . . 160
B.—Neotragus moschatus akeleyei . . . 161
C.—Neotragus moschatus deserticola . . 162

II. Neotragus (Nesotragus) livingstonianus . 162
A.—Neotragus livingstonianus livingstonianus . 163
B.—Neotragus livingstonianus zuluensis . . 164

2. Subgenus Hylarnus. 166

III. Neotragus (Hylarnus) batesi . . . 166

IV. Neotragus (Hylarnus) harrisoni . . . 167

3. Subgenus Neotragus 168

V. Neotragus pygmæus 169

Subfamily ix. Madoquinæ 172

I. Genus Madoqua 172

1. Subgenus Madoqua 173

I. Madoqua saltiana. 174

II. Madoqua swaynei 176

III. Madoqua piacentinii 177

IV. Madoqua phillipsi 177
A.—Madoqua phillipsi phillipsi . . . 178
B.—Madoqua phillipsi harrarensis . . . 179
C.—Madoqua phillipsi gubanensis . . . 181

V. Madoqua erlangeri 182

VI. Madoqua cordeauxi 182

2. Subgenus Rhynchotragus 183

VII. Madoqua (Rhynchotragus) damarensis . . 184
A.—Madoqua damarensis damarensis . . 184
B.—Madoqua damarensis variani . . . 185

VIII. Madoqua (Rhynchotragus) cavendishi . . 185
A.—Madoqua cavendishi cavendishi . . . 186
B.—Madoqua cavendishi minor . . . 187

PAGE

IX. Madoqua (Rhynchotragus) kirki . . . 187
A.—Madoqua kirki kirki 188
B.—Madoqua kirki nyikæ 189
C.—Madoqua kirki hindei 190
X. Madoqua (Rhynchotragus) thomasi . . 191
XI. Madoqua (Rhynchotragus) guentheri . . 191
A.—Madoqua guentheri guentheri . . . 192
B.—Madoqua guentheri wroughtoni . . . 193
C.—Madoqua guentheri smithi . . . 194
XII. Madoqua (Rhynchotragus) nasoguttata . 194
II. Genus Dorcotragus 195
Dorcotragus megalotis 195
Subfamily x. Reduncinæ 197
I. Genus Pelea 199
Pelea capreolus 199
II. Genus Redunca 202
1. Subgenus Eleotragus 203
I. Redunca (Eleotragus) arundinum . . 203
A.—Redunca arundinum arundinum . . 206
B.—Redunca arundinum occidentalis . . 210
2. Subgenus Redunca 210
II. Redunca redunca 211
A.—Redunca redunca redunca 213
B.—Redunca redunca bohor 214
C.—Redunca redunca wardi 215
D.—Redunca redunca tohi 217
E.—Redunca redunca cottoni 217
F.—Redunca redunca nigeriensis . . . 219
G.—Redunca redunca ugandæ 220
III. Redunca fulvorufula 220
A.—Redunca fulvorufula fulvorufula . . . 222
B.—Redunca fulvorufula chanleri . . . 223
C.—Redunca fulvorufula shoana . . . 224
III. Genus Kobus 225
1. Subgenus Kobus 226
I. Kobus ellipsiprymnus 226
II. Kobus defassa 232
A.—Kobus defassa defassa 238
B.—Kobus defassa ugandæ 240

PAGE

C.—Kobus defassa unctuosus 241
D.—Kobus defassa crawshayi 244
E.—Kobus defassa penricei 245

2. Subgenus Onotragus 246

III. Kobus (Onotragus) leche 246

IV. Kobus (Onotragus) robertsi . . . 249

V. Kobus (Onotragus) smithemani . . . 249

VI. Kobus (Onotragus) maria 251

3. Subgenus Adenota 253

VII. Kobus (Adenota) kob 253

A.—Kobus kob kob 256
B.—Kobus kob nigricans 258
C.—Kobus kob adolfi 259
D.—Kobus kob bahr-keetæ 259
E.—Kobus kob ubangiensis 259
F.—Kobus kob aluræ 260
G.—Kobus kob loderi 260
H.—Kobus kob neumanni 262
I. —Kobus kob notatus 263
J. —Kobus kob thomasi 264
K.—Kobus kob nigroscapulatus . . . 265
L.—Kobus kob leucotis 266

VIII. Kobus (Adenota) vardoni 268

A.—Kobus vardoni vardoni 269
B.—Kobus vardoni senganus 269

LIST OF ILLUSTRATIONS

PAGE

Fig. 1.—Skull and Horns of Tora Hartebeest (*Bubalis tora*) . 9
,, 2.—Head of Coke's Hartebeest (*Bubalis cokei*). . . 14
,, 3.—Skull and Horns of Jackson's Hartebeest (*Bubalis lelwel jacksoni*) 22
,, 4.—Head and neck of Northern Race of Rooi Hartebeest (*Bubalis caama selbornei*) 26
,, 5.—Head of Lichtenstein's Hartebeest (*Bubalis lichtensteini*). 30
,, 6.—Head of Tiang (*Damaliscus korrigum tiang*) . . 42
,, 7.—Skull and Horns of Herola or Hunter's Hartebeest (*Damaliscus hunteri*) 47
,, 8.—The Gnu (*Connochætes gnu*) 49
,, 9.—Skull and Horns of Gnu (*Connochætes gnu*) . . 53
,, 10.—Front and Side Views of Skull and Horns of Yellow-backed Duiker (*Cephalophus sylvicultrix*) . . 65
,, 11.—Front and Side Views of Skull and Horns of Duiker-bok (*Cephalophus grimmi*) 112
,, 12.—Front and Side Views of Skull of Somali Klipspringer (*Oreotragus oreotragus somalicus*) . . . 129
,, 13.—Front and Side Views of Skull and Horns of Peters's Oribi (*Ourebia hastata*) 136
,, 14.—Front and Side Views of Skull and Horns of Kenia Oribi (*Ourebia kenyæ*) 142
,, 15.—Front and Side Views of Skull of Steinbok (*Raphicerus campestris*) 150
,, 16.—Livingstone's Suni (*Neotragus* [*Nesotragus*] *livingstonianus*). A, Male, changing coat, and female. B, Female 163
,, 17.—Front and Side Views of Skull and Horns of Zulu race of Livingstone's Suni (*Neotragus* [*Nesotragus*] *livingstonianus zuluensis*) 165
,, 18.—Front and Side Views of Skull and Horns of Bates' Dwarf Antelope (*Neotragus* [*Hylarnus*] *batesi*) . 167
,, 19.—Front and Side Views of Skull with one Horn, and without lower jaw, of the Royal Antelope (*Neotragus pygmæus*) 171
,, 20.—Front and Side Views of Skull and Horns of Harrar Race of Phillips' Dik-Dik (*Madoqua phillipsi harrarensis*) 180
,, 21.—Front and Side View of Skull and Horns of Cavendish's Dik-Dik (*Madoqua* [*Rhynchotragus*] *cavendishi*) 186

PAGE

Fig. 22.—Front and Side Views of Skull and Horns of the Beira (*Dorcotragus megalotis*) 196
,, 23.—Skull and Horns of the Vaal Rhebok (*Pelea capreolus*) 201
,, 24.—Head of Reedbuck (*Redunca* [*Eleotragus*] *arundinum*) 207
,, 25.—Skull and Horns of Eastern Bohor Reedbuck (*Redunca redunca wardi*) 216
,, 26.—Head of Sudani Bohor Reedbuck (*Redunca redunca cottoni*), from Mongalla 218
,, 27.—Skull and Horns of Uganda Defassa (*Kobus defassa ugandæ*) 233
,, 28.—Skull and Horns of Shari Defassa (*Kobus defassa unctuosus*(?)) 243
,, 29.—Head of the Lechwe (*Kobus* [*Onotragus*] *leche*) . . 248
,, 30.—Skull and Horns of Mrs. Gray's Lechwe (*Kobus* [*Onotragus*] *maria*) 252
,, 31.—Skull and Horns of Western Kob (*Kobus kob*) . . 257
,, 32.—Skull (wanting lower jaw) and Horns of Loder's Kob (*Kobus kob loderi*). (From "Proc. Zool. Soc." 1899, p. 983) 261
,, 33.—Head and neck of Albert Nyanza Kob (*Kobus kob neumanni*.) (From a photograph lent by Rowland Ward, Ltd.) 262

CATALOGUE

OF

UNGULATES.

VOL. II.

FAMILY BOVIDÆ (*continued*).

KEY TO SUBFAMILIES OF *BOVIDÆ* INCLUDED IN THIS VOLUME.

c. Horns (when twisted) heteronymous (vol. i, p. 10).

a. Horns in both sexes, relatively large, in females; never in the form of relatively short straight spikes. Size, medium or large.

a'. Horns fibrous, depressed, with opposed edges of bases forming parallel approximated lines on forehead... *Ovibovinæ* (vol. i).

b'. Horns close-grained and more or less nearly cylindrical, at least at tips, and opposed edges of bases not forming parallel lines on forehead.

a^2. Horns conical and gently or strongly recurved, or bent downwards and outwards at bases, and finally directed upwards; never strongly ridged. Tail (except in two species of *Nemorhœdus*) short..... *Rupicaprinæ* (vol. i).

b^2. Horns sublyrate, strongly ridged, and often sharply bent near middle, or smooth and directed at first outwards or downwards. Tail relatively long *Bubalinæ*, p. 2.

b. Horns present or absent in females; when present in both sexes, spike-shaped.
a'. Horns in the form of relatively short straight spikes. Face-glands present; tail short or medium. Size small to large.
a^2. Horns frequently present in female. Face-glands forming a line on a bare streak. Head crested. Size medium or small..... *Cephalophinæ*, [p. 59.
b^2. Horns (except in one race of *Oreotragus*) normally absent in female. Face-glands not forming a line on a bare streak. Head not crested. Size small.
a^3. Hoofs truncated *Oreotraginæ*, p. 122.
b^3. Hoofs normal.
a^4. Muzzle with large bare area reaching hind angle of nostrils..... *Neotraginæ*, p. 131.
b^4. Muzzle with small bare area, not reaching much beyond front angle of nostrils..... *Madoquinæ*, p. 172.
b'. Horns (except in *Pelea*) not in the form of relatively short straight spikes; absent in females. Face-glands and (except in *Pelea*) foot-glands wanting; tail medium. Size, medium or large..... *Reduncinæ*, p. 197.

Subfamily v.—BUBALINÆ.

Size large. Tail medium or long, terminally crested or clothed with long hairs. Muzzle with a small bare muffle and large valvular nostrils, of which the lower margins are clothed with short bristly hairs. Face-glands placed near eyes, of an invaginated type, not forming a line of pores; foot-glands in a deep interdigital cleft, with the orifice forming a long slit bordered above by a sharply defined line in fore-feet, absent or rudimentary in hind feet; apparently no glands in groin. Teats 2 or 4. Lateral hoofs well developed.

Horns heteronymous, present in both sexes, relatively large in females; of moderate length, and either ridged, upright, and doubly or singly curved, with smooth tips, or smooth throughout, and directed at first mainly outwards or downwards. Skull with shallow lachrymal depressions, but no lachrymal vacuities or supraorbital pits. Upper molar hypsodont, with narrow crowns, and no inner accessory

column. Vertebræ: usually C. 7, D. 13, L. 6, S. 5, Ca. 12–14, but in *Connochætes gnu* D. 14.

The distributional area embraces practically the whole of Africa, where the country is suitable to these antelopes. In the Pliocene it included India.

The three genera here recognised are distinguished as follows:—

A. Horns rising more or less vertically, ringed, with smooth tips; face-gland with a single orifice leading into a hair-lined tube, which dips into the substance of the gland.
 a. Horns doubly curved, more or less sharply angulated, mounted on an elevated pedicle, and face abnormally elongated *Bubalis*.
 b. Horns simply curved, without sharp angulation, not supported on a pedicle, and face of normal proportions..... *Damaliscus*.

B. Horns directed mainly outwards or downwards at starting, smooth throughout; face-glands without central orifice and tube, their free surface consisting of a sparsely haired area of skin *Connochætes*.

I. Genus BUBALIS.

Bubalis, *Lichtenstein, Mag. nat. Freunde*, p. 154, 1814; *Sclater and Thomas, Book of Antelopes*, vol. i, p. 5, 1894; *Pocock, Proc. Zool. Soc.* 1910, p. 900.

Alcelaphus, *Blainville, Bull. Soc. Philom.* 1816, p. 75; *Rütimeyer, Abh. schweiz. pal. Ges.* vol. iv, p. 47, 1877.

Damalis and Acronotus, *H. Smith, Griffith's Animal Kingdom*, vol. iv, pp. 343 and 345, 1827.

Sigmoceros, *Heller, Smithson. Misc. Collect.* vol. lx, no. 8, p. 4, 1912.

Large ungainly antelopes, with abnormally long faces, and horns, which are strongly ridged for the greater part of their length, and doubly curved, with a more or less marked "elbow" at commencement of smooth tips, rising in a more or less vertical direction from a cylindrical pedicle surmounting the fronto-occipital region. Neck without mane, tail reaching below hocks, moderately haired, generally with a crest of long hair on upper side of terminal half; a whorl of hair on forehead, and hair on middle line of face below this directed downwards to a point a short distance above nose, where there is a second whorl; face-glands large, with a central

orifice leading to a hairy tube, usually tufted. General colour uniform brownish, yellowish, or rufous, with or without dark markings on face and limbs.

Distribution co-extensive with that of subfamily.

The eight species here recognised may be briefly diagnosed as follows:—

A. Horn-pedicle relatively short; horns **U**-shaped when viewed full-face.
 a. Size small, shoulder-height about 3 feet 8 inches *B. buselaphus.*
 b. Size larger, shoulder-height from about 4 feet 2 inches to 4 feet 6 inches *B. major.*

B. Horn-pedicle of medium height; horns more or less of an inverted bracket-shape (—‿—).
 a. Horns relatively slender, with middle portion inclining upwards *B. tora.*
 b. Horns stouter, typically with middle portion horizontal *B. cokei.*

C. Horns more or less intermediate in form between those of B and D *B. neumanni.*

D. Horn-pedicle very tall; horns **V**-shaped in full face.
 a. A dark face-blaze, dark markings on shoulders, thighs, and fore-legs, and a whitish patch on sides of buttocks *B. caama.*
 b. Dark and light markings absent, or represented only by small patches on face and fore-legs *B. lelwel.*

Horn-pedicle very short and broad; horns much incurved before sub-terminal elbow *B. lichtensteini.*

I. BUBALIS BUSELAPHUS.

Antilope buselaphus, *Pallas*, *Misc. Zool.* p. 7, 1766.

Antilope bubalis, *Pallas*, *Spicil. Zool.* fasc. i, p. 12, 1767, xii, p. 16, 1777; *Müller*, *Natursyst*, *Suppl.* p. 54, 1776; *Erxleben*, *Syst. Regn. Anim.* vol. i, p. 291, 1777; *Zimmermann*, *Spec. Zool. Geogr.* p. 544, 1777, *Geogr. Geschichte*, vol. ii, p. 122, 1780; *Gatterer*, *Brev. Zool.* vol. i, p. 83, 1780; *Boddaert*, *Elenchus Anim.* p. 143, 1785; *Schreber*, *Säugthiere*, pl. cclxxvii, B, 1787; *Gmelin*, *Syst. Nat.* vol. i, p. 188, 1788; *Kerr*, *Linn.'s Anim. Kingdom*, p. 314, 1792; *Donndorff*, *Zool. Beyträge*, p. 633, 1792; *Bechstein*, *Uebersicht vierfüss. Thiere*, vol. i, p. 95, 1799, vol. ii, p. 645, 1800; *Shaw*, *Gen. Zool.* vol. ii, pt. 2, p. 331, 1801; *Virey*, *Nouv. Dict. Hist. Nat.* vol. iii, p. 525, 1803; *Turton*, *Linn.'s Syst. Nat.* vol. i, p. 114, 1806; *Illiger*, *Prodr. Syst. Mamm.* p. 106, 1811; *Lichtenstein*, *Mag. nat. Freunde*, vol. vi, p. 163, 1814; *G. Fischer*, *Zoognosia*, vol. iii, p. 417, 1814; *Afzelius*, *Nova Acta Soc. Upsal.* vol. vii, p. 220, 1815; *Cuvier*, *Dict. Sci. Nat.* vol. ii, p. 241, 1816; *Desmarest*, *Nouv. Dict. Hist. Nat.* ed. 2, vol. ii, p. 195, 1816; *Goldfuss*, *Mamm.* vol. ii, p. 466, *Schreber's Säugthiere*, vol. v, p. 1171, 1820;

Schinz, *Cuvier's Thierreich*, vol. i, p. 390, 1821; *F. Cuvier*, *Hist. Nat. Mamm.* vol. iii, livr. li, 1825; *Lesson*, *Man. Mamm.* p. 381, 1827, *Nouv. Tabl. Règne Anim.* p. 180, 1842; *J. B. Fischer*, *Synop. Mamm.* p. 473, 1829; *Owen*, *Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii, p. 633, 1868; *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. iv, p. 469, 1844, vol. v, p. 445, 1855; *Schinz*, *Synop. Mamm.* vol. ii, p. 443, 1845; *Giebel. Säugethiere*, p. 296, 1855; *Rütimeyer*, *Abh. schweiz. pal. Ges.* vol. iv, p. 47, 1877.

Cerophorus (Alcelaphus) bubalis, *Blainville*, *Bull. Soc. Philom.* 1816, p. 75.

Damalis bubalis, *H. Smith*, *Griffith's Animal Kingdom*, vol. iv, p. 347, vol. v, p. 362, 1827.

Acronotus bubalis, *A. Smith*, *S. African Quart. Journ.* vol. ii, p. 221, 1833; *H. Smith*, *Nat. Libr.* vol. iv, p. 174, 1836; *Gray*, *List Mamm. Brit. Mus.* p. 157, 1843, *List Osteol. Brit. Mus.* p. 58, 1847.

Bubalus mauritanicus, *Ogilby*, *Proc. Zool. Soc.* 1836, p. 139.

Bubalis mauretanica, *Sundevall*, *K. Svenska Vet.-Ak. Handl.* 1844, p. 208, 1846; *Temminck*, *Esquiss. Zool. Guiné*, p. 195, 1853; *Lydekker*, *Horns and Hoofs*, p. 195, 1893.

Boselaphus bubalis, *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 233, 1846, *Proc. Zool. Soc.* 1850, p. 139, *Knowsley Menagerie*, p. 20, pl. xx, 1850; *Blyth*, *Proc. Zool. Soc.* 1869, p. 51.

Alcelaphus bubalis, *Gray*, *Cat. Ungulata Brit. Mus.* p. 123, 1852, *Cat. Ruminants Brit. Mus.* p. 43, 1872, *Hand-List Ruminants Brit. Mus.* p. 114, 1873; *Tristram*, *The Sahara*, p. 387, 1860, *Proc. Zool. Soc.* 1866, p. 86; *Brooke*, *Proc. Zool. Soc.* 1876, p. 643; *Rütimeyer*, *Abh. schweiz. pal. Ges.* vol. iv, p. 47, 1877; *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 139, 1887, *Cat. Mamm. Leyden Mus.* (*ibid.* vol. xi) p. 171, 1892; *Lataste*, *Actes Soc. Linn. Bordeaux*, vol. xxxix, p. 2–4, 1885.

Bubalis bubalis, *Brehm*, *Thierleben*, *Säugetiere*, vol. iii, p. 217, 1880, ed. 3, p. 355, 1891; partim.

(?) Alcelaphus bubalis, *var.* tunisianus, *Gray*, *Cat. Ungulata Brit. Mus.* p. 123, 1852, *Cat. Ruminants Brit. Mus.* p. 44, 1872.

Alcelaphus bubale, *Gerrard*, *Cat. Bones Mamm. Brit. Mus.* p. 243, 1862.

Alcelaphus bubalinus, *Flower and Lydekker*, *Study of Mammals*, p. 335, 1891.

Bubalis buselaphus, *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 7, pl. i, 1894; *Rothschild*, *Novit. Zool.* vol. viii, p. 177, 1901; *Anderson and de Winton*, *Zool. Egypt*, *Mamm.* p. 336, 1902; *Renshaw*, *Final Nat. Hist. Essays*, p. 149, 1907; *Hartert*, *Novit. Zool.* vol. xx, p. 35, 1913.

Bubalis boselaphus, *Trouessart*, *Cat. Mamm.* vol. ii, p. 905, 1899; *Lydekker*, *Great and Small Game of Africa*, p. 133, 1899, *Game Animals of Africa*, p. 94, 1908; *Bryden*, *Great and Small Game of Africa*, p. 134, 1899; *Ward*, *Records of Big Game*, ed. 6, p. 120, 1910; *Pocock*, *Proc. Zool. Soc.* 1910, p. 900.

Typical locality probably Morocco.

Smallest of the group, shoulder-height 3 feet 7 inches to 3 feet 8 inches. Horns mounted on a short pedicle,

diverging in a regular U-shaped curve, with little backward inclination of tips. Colour uniform pale rufous or yellowish fawn, with no dark markings on face or limbs, but a pair of indistinct greyish patches on muzzle; no whitish on lower part of rump; only terminal tuft of tail black. Approximate basal length of skull 13 inches; maximum breadth $4\frac{3}{4}$ inches. Good horns may measure from $13\frac{1}{2}$ to 15 inches along front curve, the maximum recorded length being $15\frac{1}{2}$ inches.

Information is lacking with regard to the distribution of this apparently rare species in North Africa. It has been stated by Tristram that this hartebeest, which has long since been extinct in Egypt, exists in Syria and Arabia, and in support of this statement the authors of the *Book of Antelopes* refer to a pair of horns obtained by Tristram from the Arabs of Syria "apparently referable to a female of this species." The present writer has, however, been unable to find any other testimony that this, or any other, hartebeest inhabits south-western Asia.

641, *a*. Skin, mounted. North Africa.
Presented by the Zoological Society, 1855.

98. 6. 16. 1. Head, mounted. North Africa.
Presented by the Duke of Bedford, K.G., 1898.

59. 2. 10. 1. Skin and skeleton, female. North Africa.
Presented by the Zoological Society, 1857.

641, *c*. Horns. North Africa. *No history.*

46. 10. 30. 153. Skin young, mounted. Tunis.
Purchased, 1846.

II. BUBALIS MAJOR.

Boselaphus major, *Blyth*, *Proc. Zool. Soc.* 1869, p. 52.

Bubalis major, *Ward*, *Records of Big Game*,* p. 62, 1892, ed. 6, p. 121, 1910; *Matschie*, *Mitth. deutsch. Schutzgebiet*, vol. vi, pt. 3, p. 17, 1893; *Lydekker*, *Horns and Hoofs*, p. 196, 1893, *Great and Small Game of Africa*, p. 134, 1899, *Game Animals of Africa*, p. 96, 1908; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 11, 1894; *Arnold*, *Great and Small Game of Africa*, p. 135, 1899; *de Winton*, *Ann. Mag. Nat. Hist.* ser. 7, vol. iv, p. 358, 1899; *Jentink*, *Notes Leyden Mus.* vol. xxiii, p. 18, 1901; *Alexander*, *From Niger to Nile*, vol. ii, p. 390, 1907.

* This name like others in the sequel given as dating from Ward's book were first used in the *Field* by the present writer in articles subsequently republished in *Horns and Hoofs*.

Typical locality probably Gambia.

Larger than the preceding species, standing as much as 4½ feet at the withers, with more massive horns, which are more sharply bent near the middle of their length, and have long, smooth tips. General colour uniform rufous fawn, ranging from deep rufous almost to greyish fawn, with the face deep brown, and dark brown or blackish streaks on the fore-legs below the knees, and the tail-tuft black. The record horns measure 26¾ inches along the front curve, with a girth of 13½, and a tip-to-tip interval of 6¼ inches.

The range extends from Gambia to Nigeria and the interior of the Cameruns, Togoland, etc.

13. 3. 8. 3. Skin, mounted. Leri-n-duchi, North-eastern Zaria, Northern Nigeria.

Presented by Malcolm P. Hyatt, Esq., 1913.

76. 1. 4. 8. Skull, with horns, and head-skin. West Africa. *Purchased*, 1876.

95. 8. 25. 1–3. Skull, with horns, and skin, immature, and skull, with horns, and skin, female. Lokoja, at junction of Benue with Niger. *Presented by Lieut.-Col. Sir F. J. D. Lugard, G.C.M.G., C.B.*, 1895.

60. 1. 10. 19. Skull, with horns. West Africa.

Purchased, 1860.

64. 7. 16. 1. Skull. West Africa; collected by Dalton.

Purchased, 1864

69. 2. 9. 1. Frontlet and horns. West Africa; received from E. Blyth, Esq. Co-type. *Purchased*, 1869.

69. 2. 9. 2. Frontlet and horns, female. Same locality and collector. Co-type. *Same history.*

1987, *e*. Frontlet and horns, female, West Africa.

No history.

92. 11. 4. 1. Frontlet and horns. Southern Nigeria; collected by E. Bower, Esq. *Purchased*, 1892.

99. 6. 15. 14. Skull, with horns, and skin. Northern Territory of Gold Coast. *Presented by Capt. W. Giffard*, 1899.

1. 4. 3. 5. Skull, with horns, immature. Nigeria; collected by Major Wilkinson.

Presented by J. Rowland Ward, Esq., 1901.

4. 7. 9. 1. Skull, with horns, and head-skin. Zungeru, Northern Nigeria. *Presented by Capt. H. Cock*, 1904.

4. 7. 9. 2. Skull, with horns, and head-skin, female. Same locality. *Same history.*

4. 7. 9. 3. Frontlet and horns. Momaji, Northern Nigeria. *Same history.*

5. 5. 10. 2–3. Two skulls, with horns, and skins. Wasé, northern Nigeria. *Presented by Dr. H. K. W. Kumm*, 1905.

7. 7. 8. 248. Skull, with horns, and head-skin. Ibi, northern Nigeria; Alexander-Gosling Expedition. *Presented by the Alexander-Gosling Expedition*, 1907.

7. 7. 8. 249. Skull, with horns, and skin. Ibi; Alexander-Gosling Expedition. *Same history.*

7. 7. 8. 250. Skull, with horns, female. Nigeria (?); Alexander-Gosling Expedition. *Same history.*

7. 7. 8. 251. Skull, with horns, and skin, female. Ibi; Alexander-Gosling Expedition. *Same history.*

7. 7. 8. 261. Skin. Ibi; same collection. *Same history.*

11. 6. 10. 109. Skull, with horns, and skin. Upper Gambia. *Presented by G. Fenwick Owen, Esq.*, 1911.

11. 6. 10. 110. Skull, with horns. Upper Gambia. *Same history.*

1. 9. 15. 1. Skin. Nigeria; collected by Capt. H. A. Porter. *Presented by J. Rowland Ward, Esq.*, 1901.

8. 10. 15. 1. Body-skin. Northern Territories, Gold Coast. *Presented by G. Dudgeon, Esq.*, 1908.

13. 8. 3. 1. Skull, with horns, and skin. Upper Gambia. *Presented by G. Blaine, Esq.*, 1913.

13. 8. 3. 2. Head-skin. Same locality. *Same history.*

III. BUBALIS TORA.

Alcelaphus tora, *Gray*, *Nature*, vol. viii, p. 364, 1873, *Ann. Mag. Nat. Hist.* ser. 4, vol. xii, p. 341, 1873, *Hand-List Ruminants Brit. Mus.* p. 172, 1873; *Sclater*, *Proc. Zool. Soc.* 1873, pp. 729 and 762, 1875, p. 529; *Rütimeyer*, *Abh. schweiz. pal. Ges.* vol. iv, p. 47, 1877; *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 139, 1877, *Cat. Mamm. Leyden Mus.* (*ibid.* vol. xi) p. 171, 1892; *Flower and Lydekker*, *Study of Mammals*, p. 335, 1891.

Boselaphus bubalis, *Heuglin*, *Nova Acta*, *Ac. Cæs. Leop.-Car.* vol. xxx, pt. 2, p. 21, 1863, *nec* Antilope bubalis, *Pallas.*

Acronotus bubalis, *Heuglin*, *Reise Nordost Afrika*, vol. ii, p. 122, 1877, *nec* Antilope bubalis, *Pallas.*

Bubalis bubalis, *Brehm*, *Thierleben*, *Säugethiere*, vol. iii, p. 217, 1880, ed. 3, p. 355, 1891; partim.

Bubalis tora, *Ward*, *Records of Big Game*, p. 59, 1892, ed. 6, p. 123, 1910; *Lydekker*, *Horns and Hoofs*, p. 198, 1893, *Great and Small Game of Africa*, p. 133, 1899, *Game Animals of Africa*, p. 100, 1908; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 15, 1894; *Rothschild*, *Powell-Cotton's Sporting Trip through Abyssinia*, p. 461, 1902.

Tora.

Typical locality Abyssinia, to which country, together with the lower part of the Blue Nile basin, this species appears to be restricted.

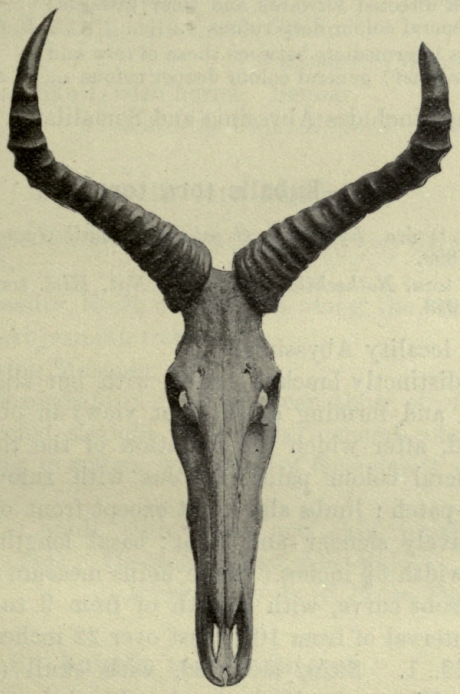


Fig. 1.—Skull and Horns of Tora Hartebeest (*Bubalis tora*).

Size, typically, much the same as in the preceding species; the shoulder-height ranging, it is stated, from 4 to 4½ feet. Horns, which surmount a pedicle of medium height, in the form of a wide inverted bracket, and very slender; general colour ranging from pale fulvous, with or without a distinct dirty white rump-patch to deep rufous; tail-tuft black.

The local races are distinguished as follows:—

A. A light rump-patch, but no dark face-blaze.
 a. Horns distinctly bracket-shaped, and forming an obtuse angle at bend, with divergent tips *B. t. tora.*
 b. Horns intermediate between *a* and *c*, with tips directed straight backwards *B. t. digglei.*
 c. Horns less distinctly bracket-shaped, and forming nearly a right angle at bend, with convergent tips *B. t. rahatensis.*

B. No light rump-patch, but a dark face-blaze.
 a. Horns directed forwards and then inwards; general colour deep rufous *B. t. swaynei.*
 b. Horns intermediate between those of *tora* and *swaynei*; general colour deeper rufous ... *B. t. noacki.*

The range includes Abyssinia and Somaliland.

A.—Bubalis tora tora.

Bubalis tora typica, *Lydekker*, *Great and Small Game of Africa*, p. 133, 1899.

Bubalis tora tora, *Rothschild*, *Ann. Mag. Nat. Hist.* ser. 8, vol. 12, p. 576, 1913.

Typical locality Abyssinia.

Horns distinctly bracket-shaped, with but slight inward inclination, and forming (in a front view) an obtuse angle at the bend, after which the direction of the tips is outwards; general colour palish fulvous with rufous chin; a light rump-patch; limbs also light except front of fore-legs. Skull relatively slender and light; basal length $15\frac{3}{4}$, and maximum width $5\frac{3}{8}$ inches. Fine horns measure from 20 to $22\frac{1}{2}$ along front curve, with a girth of from 9 to 10, and a tip-to-tip interval of from 10 to just over 22 inches.

73. 8. 29. 1. Skin, mounted, with skull (figured in Gray's *Hand-List*, pl. xli) in head. Dembelas, Abyssinia. Co-type. *Purchased*, 1873.

73. 8. 29. 2. Skin, mounted, female, with skull (figured by Gray, *loc. cit.*) in head. Dembelas. Co-type. *Same history.*

13. 11. 13. 1. Head, mounted. Dinder Valley, White Nile; collected by Capt. M. E. T. Gunthorpe. *Presented by Col. E. J. Gunthorpe*, 1913.

13. 11. 13. 2. Head, mounted, female. Same locality and collector. *Same history.*

88. 7. 4. 1. Head, mounted. Abyssinia.
Purchased, 1888.

88. 7. 4. 2. Skull, with horns (fig. 1). Abyssinia.
Same history.

73. 8. 29. 3. Skeleton, mounted, with horns. Dembelas.
Purchased, 1873.

73. 2. 24. 12. Skin, skull, and horns. Dembelas.
Same history.

73. 2. 24. 13. Skin, skull, and horns, young. Dembelas. Milk-canines exist in skull. *Same history.*

94. 4. 26. 1. Skull, with horns, Sudan.
Purchased (*Ward*), 1894.

5. 9. 24. 4. Skull, with horns. Sennar.
Presented by Capt. E. de H. Smith, 1905.

B.—Bubalis tora digglei.

Bubalis tora digglei, *Rothschild*, *Ann. Mag. Nat. Hist. ser.* 8, vol. xii, p. 576, 1913.

Typical locality Keili, northwards along the Ofat River on the Sudan-Abyssinian frontier.

Type in Tring Museum.

Horns intermediate in form between those of *A* and *C*, with tips directed straight backwards; general colour dark fulvous, tending to rufous, with hair of face-glands and chin black.

1. 7. 6. 12. Skull, with horns, and skin, provisionally referred to this race. Hawash Valley, Abyssinia.
Presented by E. A. Pease, Esq., 1901.

C.—Bubalis tora rahatensis.

Bubalis tora rahatensis, *O. Neumann*, *Sitzber. Ges. nat. Freunde*, 1906, p. 246; *Lydekker*, *Game Animals of Africa*, p. 100, 1908; *Ward*, *Records of Big Game*, ed. 6, p. 123, 1910.

Typical locality Ambu, Rahat, Abyssinia, whence the range extends to middle part of Blue Nile Valley.

Type the head figured on p. 334 of Powell-Cotton's *Sporting Trip through Abyssinia;* now in the collection of the author of that work at Quex Park, Birchington.

Horns less distinctly bracket-shaped than in typical race,

with the points inclining inwards, and the bend nearly at right angles.

94. 4. 26. 1. Skull, provisionally referred to this race. Nile Valley. *Presented by J. Rowland Ward, Esq.*, 1894.

D.—Bubalis tora swaynei.

Bubalis swaynei, *Sclater*, *Proc. Zool. Soc.* 1892. p. 98, pl. v, and pp. 118, 257; *Swayne*, *ibid.* p. 303, *Seventeen Trips through Somaliland*, ed. 2, p. 305, 1900, *Great and Small Game of Africa*, p. 144, 1899; *Ward*, *Records of Big Game*, p. 60, 1892, ed. 6, p. 125, 1910; *Lydekker*, *Horns and Hoofs*, p. 198, 1893, *Great and Small Game of Africa*, p. 133, 1899, *Game Animals of Africa*, p. 101, 1908; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 21, pl. ii, 1894; *Drake-Brockman*, *Mammals of Somali*. p. 57, 1910.

Bubalis tora swaynei, *Rothschild*, *Ann. Mag. Nat. Hist.* ser. 8, vol. xii, p. 576, 1813.

Sig.

Typical locality the "Haud" of Central Somaliland.

Somewhat smaller than the typical race (shoulder-height about 3 feet, 11 inches), and distinguished by the presence of dark markings on the face and limbs, the richer body-colouring, and the absence of a whitish rump-patch. Horn-tips directed forwards and then inwards; general colour deep rufous brown, finely speckled with white, due to the white tips of the hairs; face, except a chocolate band just below line of eyes, gland-tufts, chin, shoulders, fore-legs above knees, thighs, a patch on inside of hind-legs above hocks and an indistinct one on outer side, hind surfaces of pasterns, and upper surface of terminal half of tail, with its crest, black; hams paler than back, but root of tail and legs (except where black) coloured like back. Fine horns measure from 19 to just over 20 inches along front curve, with a girth of from 9 to 10¼, and a tip-to-tip interval of from 16 to 27 inches.

93. 4. 7. 1. Skin, mounted, and skull. Somaliland. *Presented by Dr. P. L. Sclater*, 1893.

86. 1. 25. 4. Body-skin. Near Berbera; collected by Herr J. Menges. *Same donor*, 1886.

92. 5. 10. 1. Head-skin, skull, and horns. Somaliland; collected by Col. H. G. C. Swayne. Type. *Same donor*, 1892.

93. 12. 1. 5–6. Two skins and skulls, with horns. Ogaden, Somaliland. *Same donor*, 1873.

E.—Bubalis tora noacki.

Bubalis noacki, *O. Neumann*, *Sitzber. Ges. nat. Freunde*, 1905, p. 93.
Bubalis swaynei noacki, *Lydekker*, *Game Animals of Africa*, p. 101, 1908; *Ward*, *Records of Big Game*, ed. 6, p. 125, 1910.

Typical locality Eastern Somaliland.

General colour deeper rufous, tending to purplish red, with the black face-markings indistinct and less defined than in preceding race, but similar limb-markings; horns intermediate between those of *swaynei* and *tora*.

Type in collection of Dr. O. Neumann.

6. 11. 1. 54. Skull, with horns, and skin. Arusi-Gallaland. *Presented by W. N. McMillan, Esq.*, 1906.

IV. BUBALIS COKEI.

Alcelaphus cokei, *Günther*, *Ann. Mag. Nat. Hist.* ser. 5, vol. xiv, p. 426, 1884; *Thomson*, *Masailand*, p. 220, 1885; *Hunter*, *Willoughby's East Africa*, p. 288, pl. i, fig. 1, 1889; *Lugard*, *East Africa*, vol. i, p. 532, 1893.

Bubalis cokei, *Ward*, *Records of Big Game*, p. 61, 1892, ed. 6, p. 127, 1910; *Lydekker*, *Horns and Hoofs*, p. 197, 1893, *Great and Small Game of Africa*, p. 133, 1899, *Game Animals of Africa*, p. 102, 1908; *Jackson*, *Big-Game Shooting* (*Badminton Libr.*), vol. i, p. 285, 1894; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 27, pl. iii, 1894; *O. Neumann*, *Sitzber. Ges. nat. Freunde*, 1905, p. 95 (*cookei*); *Matschie*, *Säugeth. Deutsch-Ostafrika*, p. 110, 1895; *A. H. Neumann*, *Great and Small Game of Africa*, p. 147, 1899; *Allen*, *Bull. Amer. Mus. Nat. Hist.* vol. xvi, p. 155, 1906; *Hollister*, *Smithson. Misc. Collect.* vol. lvi, no. 2, p. 2, 1910; *Lönnberg*, *K. Svenska Vet.-Ak. Handl.* vol. xlviii, no. 5, p. 149, 1912.

Kongoni.

Typical locality Usagara, German East Africa. Size medium; shoulder-height 4 feet to 4 feet 1 inch. Horns (typically) bracket-shaped, on an average shorter and stouter than in the preceding species, with a smaller tip-to-tip interval, and their middle segment horizontal and equal in length to the smooth tips. General colour pale buffish fulvous, with brownish chin, and buttocks somewhat paler than back; tail long, reaching middle of shanks, and its black crest extending over about the terminal three-fourths; fringes of face-glands shorter than in *tora*. Basal length of skull 14, maximum

width $5\frac{1}{4}$ inches. Good horns measure from 19 to 21 inches along front curve, with a girth of from 9 to $10\frac{1}{2}$, and a tip-to-tip interval of from 13 to $18\frac{3}{4}$ inches.



Fig. 2.—Head of Coke's Hartebeest (*Bubalis cokei*).

The distributional area extends from Usagara northwards to Kilimanjaro, Masailand, and the neighbourhood of Lake Rudolf.

The races are distinguishable as follows :—

A. Horns distinctly bracket-shaped, with middle segment horizontal.
 a. General colour bright fawn, paler on buttocks *B. c. cokei.*
 b. General colour darker and less rufous, with buttocks but little lighter than back..... *B. c. rothschildi.*
 c. General colour lighter and more buffish than in *a*, and frontal rufous replaced by tawny *B. c. kongoni.*
B. Horns less distinctly bracket-shaped, and approximating to those of the *lelwel* group *B. c. nakuræ.*

A.—Bubalis cokei cokei.

General characters those of the species.

Typical locality Usagara.

92. 10. 18. 3. Skin, mounted. Kilimanjaro district, German East Africa; collected by Sir F. J. Jackson, K.C.M.G., C.B., and figured by Sclater and Thomas, *op. cit.*, pl. iii. *Purchased*, 1892.

84. 12. 15. 1. Head-skin and skull, with horns. Mlali Plains, near Mpwapwa. Type.
Presented by Col. the Hon. W. C. W. Coke, 1884.

90. 3. 27. 8. Skin and skull, with horns. Mountains of Taita; collected by Mr. J. Wray. *Purchased*, 1890.

90. 3. 27. 9. Skull, with horns. Same locality and collector. *Same history.*

4. 7. 2. 2. Head, mounted. East Africa (fig. 2).
Bequeathed by H. Andrew, Esq., 1904.

94. 5. 4. 2. Skull, with horns. Mikindu Plateau, east of Machakos, B. E. Africa. *Presented by Lieut.-Col. Sir F. J. D. Lugard, G.C.M.G., C.B.*, 1894.

10. 6. 10. 1. Skull, with horns. Lanjora, B. E. Africa.
Presented by Dr. W. J. Ansorge, 1910.

10. 6. 10. 1. Skull, with horns. Nairobi, B. E. Africa.
Same history.

2. 6. 15. 1. Skull, with horns, wanting lower jaw. El Donyo-eb-Urru, Ngonini, Rift Valley, B. E. Africa.
Presented by C. S. Betton, Esq., 1902.

2. 6. 15. 2. Skull, with horns. Same locality.
Same history.

2. 11. 18. 1. Skull, with horns, and head-skin. Kilimakin, Ukamba. *Presented by R. Crawshay, Esq.*, 1902.

2. 11. 18. 2. Skull, with horns. Same locality.
Same history.

1. 8. 9. 61. Skull, with horns, and head-skin. Naivasha, B. E. Africa.
Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1901.

1. 8. 9. 62. Skull, with horns, and head-skin, female. Naivasha. *Same history.*

10. 4. 20. 3–4. Head skin and skull, with horns.
Same donor, 1912.

4. 5. 5. 5–6. Two skulls, one female, with horns. Athi Plains, B. E. Africa. *Presented by C. B. Storey, Esq.*, 1904.

B.—Bubalis cokei rothschildi.

Bubalis rothschildi, *O. Neumann*, *Sitzber. Ges. nat. Freunde*, 1905, p. 94.

Bubalis cokei rothschildi, *Lydekker*, *Game Animals of Africa*, p. 103, 1908.

Typical locality Adoshebai Valley, northwards of Lake Stefanie.

Type in collection of Dr. O. Neumann.

General colour darker and less distinctly rufous than in typical race, with buttocks and hind-legs differing less in colour from back, and flanks darker and yellower; scarcely any dark hairs on chin; horns approximating to those of *swaynei noacki*, but more rounded, with the tips directed more backwardly.

No specimen in collection.

C.—Bubalis cokei nakuræ.

Bubalis nakuræ, *Heller*, *Smithson. Misc. Collect.* vol. lx, no. 8, p. 6, 1912.

Typical locality Nakuru, B. E. Africa.

According to its describer, "similar to *neumanni*, of the Lake Rudolf district, but differing by its lighter body-coloration and narrower or less broadly bracket-shaped horns; similar to *cokei* in size and general body-colour, but feet with a black band bordering hoof-clefts, and horns narrower and less bracket-shaped."

In a later paragraph it is stated that these hartebeests have the horns less widely spread than those of *neumanni*, and "more or less intermediate between those of *cokei* and *jacksoni* in shape, and on this account they have usually been considered hybrids between those species by sportsmen. This, however, is not the case, although they occupy a somewhat intermediate geographical position. They are found on the north-western edge of the range of *cokei*, and they are really surrounded by this species and actually removed by many miles from the nearest *jacksoni*. The Nakuru race is known only by a single herd, which inhabits the country lying between Lakes Nakuru and Elmentaita. From *neumanni*, which occupies the region bordering the

north-eastern shores of Lake Rudolf, they are separated by several hundred miles."

That this hartebeest (of which the type is in the U.S. National Museum) is not entitled to rank as a species, may be considered certain, as the under-mentioned specimens show an almost complete gradation to typical skulls of *cokei*.

1. 8. 9. 60. Skull, with horns. Nakuru. The horns are intermediate in character between those of typical *nakuræ* and those of the next specimens.

Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1907.

4. 11. 5. 32. Skull, with horns. Nakuru. The horns of this and the next four specimens appear to agree with the description of those of the type.

Presented by Capt. R. Meinertzhagen, 1904.

4. 11. 5. 33. Skull, with horns. Nakuru. *Same history.*

4. 11. 5. 34. Skull, with horns. Nakuru. *Same history.*

4. 11. 5. 35–36. Two skulls, with horns. Nakuru. *Same history.*

D.—Bubalis cokei kongoni.

Bubalis cokei kongoni, *Heller*, *Smithson. Misc. Collect.* vol. lx, no. 8, p. 5, 1912.

Typical locality Loita Plains, Southern Guaso-nyiro Valley, B. E. Africa.

Type in U.S. National Museum.

Stated to differ from the typical race by its lighter colour, which is more buffish and less rufous on the body, while the rufous of the forehead of the latter is replaced by tawny. The skull is also stated to be, on the average, wider, with shorter and wider horn-pedicles (width of latter 94 cm., length 114 cm.).

This is a highland race, whereas the typical form is a lowland animal.

No specimen in collection.

V. BUBALIS NEUMANNI.

Bubalis neumanni, *Rothschild, Ann. Mag. Nat. Hist.* ser. 6, vol. xx, p. 376, 1897, *Novit. Zool.* vol. iv, p. 377, pl. xiv, 1897, vol. viii, p. 177, 1901; *Sclater and Thomas, Book of Antelopes*, vol. iv, p. 223, 1900; *O. Neumann, Sitzber. Ges. nat. Freunde*, 1905, p. 95; *Lydekker, Game Animals of Africa*, p. 109, 1908; *Ward, Records of Big Game*, ed. 6, p. 133, 1910.

Bubalis tora neumanni, *Lydekker, Great and Small Game of Africa*, p. 133, 1899; *A. H. Neumann, Great and Small Game of Africa*, p. 141, 1899; *Heller, Smithson. Misc. Collect.* vol. lx, no. 8, p. 17, 1912.*

Typical locality north-east of Lake Rudolf.

Type in Tring Museum.

In this species, which may be only a race of *cokei*, the horns are intermediate to a certain extent between those of the *tora-cokei* and those of the *lelwel-caama* group. Those of the male are thicker and less divergent, with less distinct ridges, than those of *tora*, while they do not present the distinct V-shape characteristic of *lelwel*. Their tips are directed inwards and backwards. General colour fulvous fawn, richer on the back than on flanks, and much paler on under-parts; chin blackish, and tail-tuft black.

97. 11. 22. 1. Plaster cast of skull and horns. Original from district north-east of Lake Rudolf. Type.

Presented by A. H. Neumann, Esq., 1897.

97. 11. 22. 2. Head-skin, on cast of skull and horns, female. Same locality. Paratype. *Same history.*

The following East African specimens belong to the type regarded, together with the Nakuru hartebeest, by Oscar Neumann (*Sitzber. Ges. nat. Freunde*, 1895, p. 95) as representing hybrids between *B. cokei* and *B. lelwel jacksoni*.

4. 7. 2. 1. Head, mounted. East Africa. Presents comparatively little difference from the type of *B. neumanni*.

Bequeathed by H. Andrew, Esq., 1904.

2. 2. 12. 1. Skin, mounted, female. Near Lake Baringo, B. E. Africa. *Presented by J. Rowland Ward, Esq.*, 1902.

* Heller does not actually use this name, but states that the horns of the type specimens of this hartebeest are "practically the shape of those of *tora*, of which *neumanni* appears to be a race."

VI. BUBALIS LELWEL.

Acronotus lelwel, *Heuglin, Reise Nordost-Afrika*, vol. ii, p. 124, 1877; *O. Neumann, Sitzber. Ges. nat. Freunde*, 1896, p. 78, 1905, p. 95 (*lelvel*).

Bubalis lelwel, *Rothschild, Novit. Zool.* vol. viii, p. 177, 1901; *Thomas, Proc. Zool. Soc.* 1904, vol. i, p. 456; *Alexander, From Niger to Nile*, vol. ii, p. 390, 1907; *Lydekker, Game Animals of Africa*, p. 107, 1908, *Supplement to do.* p. 6, 1911; *Ward, Records of Big Game*, ed. 6, p. 131, 1910; *Heller, Smithson. Misc. Collect.* vol. lx, no. 8, p. 8, 1912.

Lelwel.

Typical locality west bank of Nile in Jur district, Egyptian Sudan.

A large species, standing about 4 feet 4 inches at the shoulder. Horns surmounting a very high pedicle, and forming a V when viewed from in front, with the tips bent backwards at rather more than a right angle; general colour deep foxy red, either uniform throughout (with the exception of the chin and tail-tuft), or with a certain amount of dark markings on face, spine, and front of fore-legs. The tips of the horns may either converge or diverge to a slight degree.

The species is typified by horns obtained by Heuglin in the Egyptian Sudan, but ranges southward to the north of Lake Baringo and Uganda.

The races are characterised as follows:— *

A. Small dark markings on face, back, and limbs.... *B. l. insignis.*

B. Dark markings on lower parts of limbs.
 a. Horns convergent..... *B. l. lelwel.*
 b. Horns less depressed, convergent or divergent..... *B. l. tschadensis.*
 c. Horns parallel or convergent; colour a lighter rufous yellow than in any other race..... *B. l. roosevelti.*

C. No dark markings, except on chin.
 a. Horns divergent; general colour bright rufous yellow..... *B. l. jacksoni.*
 b. Horns parallel or convergent; general colour a purer and darker rufous yellow..... *B. l. niediecki.*

* *B. l. keniæ*, Kenia district, Heller, *Smithson, Misc. Collect.* vol. lxi, no. 17, p. 3, 1913, was described too late for inclusion in this list.

A.—Bubalis lelwel lelwel.

Bubalis lelwel typica, *Lydekker*, *Game Animals of Africa*, p. 107, 1908.
Bubalis lelwel lelwel, *Schwarz*, *Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 265, 1913.

Typical locality Jur Valley, on west side of Nile, Sudan.

Typified by horns collected by Heuglin.

Horns relatively short, heavily ridged at base, with the tips slightly divergent; and, according to Heller, dark markings on front of legs, although Neumann stated that the entire colour is uniform.

0. 6. 4. 1. Imperfect skull and horns. From a tomb at Abadiyeh, Lower Egypt; collected by Prof. Flinders-Petrie. *Presented by Committee of Egyptian Exploration Fund*, 1900.

11. 8. 14. 28–29. Two similar specimens. Same locality. *Same donors*, 1911.

59. 9. 23. 2. Skull, female. Dour (? = Jur, or Djur), Bahr-el-Ghazal; collected by Consul J. Petherick. The reference of both this and the following specimens to the present race is provisional. *Purchased*, 1859.

84. 5. 1. 8. Frontlet and horns, female. Bahr-el-Ghazal; collected by Herr F. Bohndorff. *Purchased*, 1884.

7. 7. 8. 247. Skin. Between Tonga Island and Lake No, Bahr-el-Ghazal; collected during Alexander-Gosling Expedition. *Presented by the Alexander-Gosling Expedition*, 1907.

0. 9. 13. 1. Skull, with horns, and head-skin. Bahr-el-Ghazal. *Presented by Lieut. H. L. Fell, R.N.*, 1900.

B.—Bubalis lelwel tschadensis.

Bubalis lelwel tschadensis, *Schwarz*, *Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 265, 1913.

Typical locality Ketekma, east of Tschekna, Bagirmi.

Type in Senckenberg Museum, Frankfurt-am-Maine. Distinguished from *l. lelwel* by the longer and narrower nasals, and less depressed horns, in which the strongly curved tips may incline either inwards or outwards, while the front view is more distinctly V-shaped. A narrow seal-brown band above the hoofs, followed by a similar stripe on front of legs reaching to knees and hocks. From *l. lelwel* and *l. niediecki* this race differs by the more upright direction and

curved tips of the horns, while it is distinguished from *l. roosevelti* by the presence of narrow dark bands above hoofs and by the leg-stripes being seal-brown instead of tawny.

7. 7. 8. 247. Skull, with horns. Wellé Valley; collected during Alexander-Gosling Expedition.

Presented by the Alexander-Gosling Expedition, 1907.

C.—Bubalis lelwel jacksoni.

Bubalis jacksoni, *Thomas, Ann. Mag. Nat. Hist.* ser. 6, vol. ix, p. 386, 1892, *Proc. Zool. Soc.* 1904, vol. i, p. 455; *Ward, Records of Big Game*, p. 58, 1892; *Lydekker, Horns and Hoofs*, p. 196, 1893, *Great and Small Game of Africa*, p. 133, 1899; *Jackson, Big Game Shooting* (*Badminton Library*), vol. i, p. 291, 1894, *Great and Small Game of Africa*, p. 156, 1899; *Rothschild, Novit. Zool.* vol. viii, p. 177, 1901; *Sclater and Thomas, Book of Antelopes*, vol. i, p. 39, 1894; *Johnston, Uganda Protectorate*, vol. i, p. 424, pl. facing p. 27, 1902; *Allen, Bull. Amer. Mus. Nat. Hist.* vol. xxvi, p. 157, 1906; *Hollister, Smithson. Misc. Collect.* vol. lvi, no. 2, p. 2, 1910.

Bubalis lelwel, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1896, p. 78, 1905, p. 96.

Bubalis lelwel jacksoni, *Lydekker, Game Animals of Africa*, p. 107, 1908; *Ward, Records of Big Game*, ed. 6, p. 131, 1910; *Heller, Smithson. Misc. Collect.* vol. lx, no. 8, p. 8, 1912.

Typical locality Kavirondo, Uganda.

Distinguished from the typical race (according to Heller) by the absence of dark markings on fronts of fore-legs; horns with the same divergence of the tips, but basal portion less heavily ridged. General colour bright rufous yellow or foxy red, darker than in typical *lelwel*. Shoulder-height about 4 feet 4 inches; basal length of skull 16 inches, maximum width of skull $5\frac{3}{4}$ inches.

0. 4. 5. 1. Skin, mounted. Mau Plateau, B. E. Africa. *Purchased*, 1900.

92. 6. 24. 1. Skull, with horns (fig. 3), and face-skin. Near Kavirondo. Type.

Presented by Sir F. J. Jackson, K.C.M.G., C.B., 1892.

4. 2. 14. 1. Head, mounted, female. Guasin-gishu Plateau, B. E. Africa.

Presented by Major P. H. G. Powell-Cotton, 1904.

10. 6. 10. 3. Skull, with horns. Elator Valley, East Africa. *Presented by Dr. W. J. Ansorge*, 1910.

94. 11. 2. 1. Skull, with horns, and head-skin, immature. Uganda. *Presented by G. F. Scott-Elliott, Esq.*, 1894.

2. 4. 8. 1. Skull, with horns. Kagera Valley, Ankoli, Uganda. Shot by Capt. A. A. Fisher.
Presented by H. Fisher, Esq., 1902.

4. 12. 6. 17. Skull, with horns, female. Guaso-nyiro, B. E. Africa. *Presented by S. L. Hinde, Esq.*, 1904.

2. 6. 5. 1. Skull, with horns. Gilgil, Rift Valley, East Africa. *Presented by C. S. Betton, Esq.*, 1902.

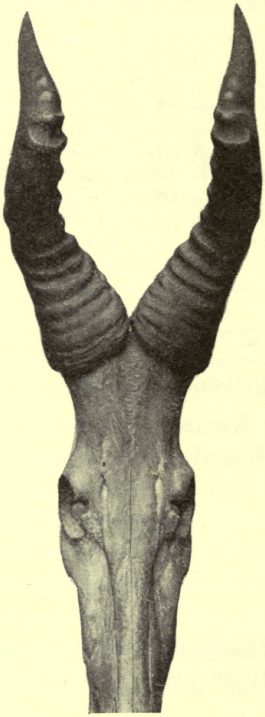


Fig. 3.—Skull and Horns of Jackson's Hartebeest (*Bubalis lelwel jacksoni*).

2. 6. 5. 2. Skull, with horns. Njoro, Rift Valley.
Same history.

2. 6. 5. 3. Skull, with horns, female. Gilgil.
Same history.

2. 6. 5. 4. Skull, wanting muzzle, with horns. Unyoro, Uganda. *Same history.*

2. 6. 15. 3. Skull, with horns. Ongotta Nairowa, Rift Valley. *Same history.*

2. 6. 15. 4. Skull, with horns. North-east of Menengai, Rift Valley. *Same history.*

1. 8. 9. 58. Skull, with horns, and head-skin. Guasingishu Plateau.

Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1901.

1. 8. 9. 59. Head-skin. Molo. *Same history,*

1. 8. 9. 57. Skull, with horns, and skin. Ravine Station, B. E. Africa. *Same history.*

13. 2. 12. 1. Frontlet and horns. East Africa. Shot by Lieut.-Col. F. C. Trollope.

Presented by Messrs. W. and E. Trollope, 1913.

D.—Bubalis lelwel niediecki.

Bubalis niediecki, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1905, p. 95.

Bubalis lelwel niediecki, *Lydekker, Game Animals of Africa*, p. 107, 1908; *Ward, Records of Big Game*, ed. 6, p. 131, 1910; *Heller, Smithson. Misc. Collect.* vol. lx, no. 8, p. 8, 1912; *Schwarz, Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 266, 1913.

Typical locality Gelo, at the source of the Sobat, east side of Nile, Sudan.

Type in the collection of Dr. O. Neumann.

General colour a purer and darker rufous yellow than in *jacksoni*, with a wholly black chin; horns parallel or converging at tips.

No specimen in collection.

E.—Bubalis lelwel insignis.

Bubalis jacksoni insignis, *Thomas, Proc. Zool. Soc.* 1904, vol. i, p. 455.

Bubalis lelwel insignis, *Lydekker, Game Animals of Africa*, p. 107, 1908; *Ward, Records of Big Game*, p. 131, 1910; *Heller, Smithson. Misc. Collect.* vol. lx, no. 8, p. 7, 1912.

Typical locality Maanja Valley, about 30 miles west of Kampala, Central Uganda.

Allied to *B. lelwel jacksoni*, but with a black dorsal stripe, and black markings on face and limbs. Dorsal stripe, in type, stopping about a foot short of the tail; tips of ears edged with black behind; two black marks on forehead between eyes; knees and front surfaces of fore-legs a short distance below them to hoofs, as well as hind surfaces of pasterns in both limbs black; on hind-legs the black mark on

front reaches from the hoofs about three-quarters the distance to level of hocks. In 1913 the writer saw the mounted head of an East African hartebeest of the *jacksoni* type in which nearly the whole face was chocolate-brown. Whether both this specimen and the type of *insignis* really represent a distinct race, or whether they are individual "sports," is doubtful.

4. 4. 19. 1. Head, mounted, and body-skin. Maanja Valley, Uganda; shot, March, 1902. Type.

Presented by Sir F. J. Jackson, K.C.M.G., C.B., 1904.

F.—Bubalis lelwel roosevelti.

Bubalis lelwel roosevelti, *Heller*, *Smithson. Misc. Collect.* vol. lx, no. 8, p. 7, 1912; *Schwarz*, *Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 266, 1913.

Typical locality Gondokoro, Mongalla Province.

Type in U.S. National Museum.

Nearly akin to *insignis*, but without dark markings on face or back; general colour lighter than in *niediecki*, with which it agrees in the parallel or inward direction of the horn-tips. A seal-brown patch above hoofs, continued as a tawny streak on fronts of legs to knees and level of hocks; chin with a similar brown patch. General colour lighter yellow rufous than in any other race. In the skull the nasals and the upper series of cheek-teeth larger than in *jacksoni*, the former measuring $9\frac{1}{4}$ inches (234 mm.) and the latter $4\frac{3}{16}$ inches (105 mm.). In addition to the parallelism or slight convergence of their tips, the horns differ from those of *jacksoni* by their straighter profile, and by the angle at base of tips being more obtuse.

13. 3. 1. 1–3. Three skins. Between Assua Valley and Gondokoro.

Presented by Sir F. J. Jackson, K.C.M.G., C.B., 1913.

VII. BUBALIS CAAMA.

Antilope caama, *Cuvier*, *Dict. Sci. Nat.* ed. 2, vol. ii, p. 242, 1816; *Desmarest*, *Nouv. Dict. Hist. Nat.* ed. 2, vol. ii, p. 196, 1816, *Mammalogie*, vol. ii, p. 467, 1822; *Goldfuss*, *Schreber's Säugthiere*, vol. v, p. 1174, 1820; *Schinz*, *Cuvier's Thierreich*, vol. i, p. 390, 1821, *Synop. Mamm.* vol. ii, p. 443, 1845; *Burchell*, *Travels in S. Africa*, vol. i, p. 420, 1822; *Desmoulins*, *Dict. Class. Hist. Nat.* vol. i, p. 444, 1822; *Lesson*, *Man. Mamm.* p. 382,

1827; *J. B. Fischer*, *Synop. Mamm.* p. 474, 1829; *Owen*, *Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii. p. 633, 1868; *Waterhouse*, *Cat. Mamm. Zool. Soc.* p. 41, 1838; *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. iv, p. 469, 1844, vol. v, p. 444, 1855; *Giebel*, *Säugethiere*, p. 297, 1855; *Drummond*, *Large Game of S. Africa*, p. 425, 1875.

Cerophorus (Alcelaphus) caama, *Blainville*, *Bull. Soc. Philom.* 1816, p. 75.

Damalis caama, *H. Smith*, *Griffith's Animal Kingdom*, vol. iv, p. 348, vol. v, p. 362, 1827; *Smuts*, *Enum. Mamm. Cap.* p. 88, 1832.

Acronotus caama, *A. Smith*, *S. African Quart. Journ.* vol. ii, p. 221, 1834; *Harris*, *Wild Sports S. Africa*, p. 377, 1839, *Wild Animals S. Africa*, pl. vii, 1840; *Gray*, *List Mamm. Brit. Mus.* p. 157, 1843, *List Osteol. Brit. Mus.* p. 58, 1847.

Bubalis caama, *Sundevall*, *K. Svenska Vet.-Ak. Handl.* 1844, p. 208, 1846; *Temminck*, *Esquiss. Zool. Guiné*, p. 195, 1853; *Brehm*, *Thierleben*, *Säugethiere*, vol. iii, p. 218, 1880; *Nicolls and Eglington*, *Sportsman in S. Africa*, p. 45, 1892; *Ward*, *Records of Big Game*, p. 562, 1892; *Selous*, *Proc. Zool. Soc.* 1893, p. 1, *Field*, vol. cxxii, p. 923, 1913; *Lydekker*, *Horns and Hoofs*, p. 193, 1893; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 33, pl. iv, 1894; *Bryden*, *Nature and Sport in S. Africa*, p. 225, 1897; *W. L. Sclater*, *Fauna S. Africa*, *Mamm.* vol. i, p. 131, 1900; *Pocock*, *Proc. Zool. Soc.* 1910, p. 900.

Boselaphus caama, *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 233, 1846, *Proc. Zool. Soc.* 1850, p. 139, *Knowsley Menagerie*, p. 20, pl. xx, 1850; *Blyth*, *Cat. Mamm. Mus. Asiat. Soc. Bengal*, p. 170, 1863, *Proc. Zool. Soc.* 1869, p. 52.

Alcelaphus caama, *Gray*, *Cat. Ungulata Brit. Mus.* p. 124, 1852, *Cat. Ruminants Brit. Mus.* p. 44, 1872, *Hand-List Ruminants Brit. Mus.* p. 115, 1873; *Gerrard*, *Cat. Bones Brit. Mus.* p. 243, 1862; *Buckley*, *Proc. Zool. Soc.* 1876, pp. 285 and 292; *Rütimeyer*, *Abh. schweiz. pal. Ges.* vol. iv, p. 47, 1877; *Selous*, *Proc. Zool. Soc.* 1881, p. 673, *A Hunter's Wanderings in S. Africa*, p. 224, 1881; *Sclater*, *List Animals Zool. Gardens*, p. 148, 1883, *Proc. Zool. Soc.* 1890, p. 411; *Flower and Garson*, *Cat. Osteol. Mus. R. Coll. Surg.* pt. ii, p. 272, 1884; *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 139, 1887, *Notes Leyden Mus.* vol. xxiii, p. 20, 1891, *Cat. Mamm. Leyden Mus.* (*Mus. Pays-Bas*, vol. xi) p. 71, 1892; *Bryden*, *Kloof and Karroo*, p. 291, 1889, *Gun and Camera*, p. 505, 1893; *W. L. Sclater*, *Cat. Mamm. Ind. Mus.* p. 170, 1891.

Bubalis cama, *Lydekker*, *Great and Small Game of Africa*, p. 133, 1899, *Game Animals of Africa*, p. 103, 1908; *Field*, vol. cxxii, p. 620, 1913; *Bryden*, *Great and Small Game of Africa*, p. 150, 1899; *Ward*, *Records of Big Game*, ed. 6, p. 129, 1910.

Rooi, or Cape, Hartebeest.

Typical locality Cape Colony.

Size typically about 4 feet, but reaching, it is stated, to about 4 feet 2 inches, in some specimens. Horns surmounting a very tall pedicle, from which they diverge

evenly so as to form a V when viewed full face, then curving forwards and upwards, and then bending sharply backwards, so that the "elbow" is nearly a right angle. General colour some shade of bright reddish brown, with the face, except for a band of varying width between and below line of eyes (which is light-coloured), and a patch on occiput, continued as a line down nape, nearly black;



FIG. 4.—HEAD AND NECK OF NORTHERN RACE OF ROOI HARTEBEEST (*Bubalis caama selbornei*).

withers, shoulders, thighs, fore-legs to knees, part of fore-shanks, and chin dark plum colour, and a yellowish white patch, which does not include the middle of dorsal surface of tail, on the sides and lower part of rump; tail not reaching hocks, with the middle of its dorsal surface dark throughout, and the crest ascending to within a short distance of the root; under-parts whitish. Skull with a very narrow and elongated frontal region; basal length 17⅝ inches, maximum width 6⅛ inches. Good horns measure from 24 to 26 inches

along the front curve, with a girth of from 10¼ to 12, and a tip-to-tip interval of from 7 to 17 inches.

The range originally extended from the Cape Town district as far north as the Limpopo on the eastern side of the continent and somewhat further north on the western side, on the borders of the Kalahari Desert; it thus included Cape Colony, Basutoland, the N.W. Transvaal, and British Bechuanaland.

The Basuto hartebeests now live in mountainous country, at an elevation at which much snow falls in winter.

Two races may be recognised:—

a. South of Orange River. Extinct some time after 1811; exact colour unknown..... *B. caama caama.*

b. North of Orange River; general colour as above *B. caama selbornei.*

A.—Bubalis caama caama.

Typical locality Cape Colony; extinct.

B.—Bubalis caama selbornei.

Bubalis caama selbornei, *Lydekker*, *Proc. Zool. Soc.* 1913, p. 820; *Abs.* p. 19.

Typical locality Kimberley, the herd there having apparently been imported from the Transvaal.

The range is taken to include all the country north of the Orange River inhabited by hartebeests.

N.B.—All the specimens in the collection are included in one list; some or all of the older ones may represent the typical race.

12. 10. 10. 1. Skin, mounted (fig. 4). Kimberley Game Farm, imported from Transvaal. Type of *selbornei*. The pale colouring and imperfect development of the dark markings in this specimen seem to be abnormal or due to immaturity, as other heads from the Kimberley herd show full development of the face-blaze. *Presented by the De Beers Mining Co. (at the instance of the Earl of Selborne, K.G.)*, 1912.

6. 8. 3. 1. Frontlet and horns of a very old male. South-east Africa. The tips of the horns are much worn away.

Presented by J. Kenny, Esq., 1906.

42. 4. 11. 6. Skin, formerly mounted. South Africa, probably, according to Selous (*op. cit.* 1913), from Western Transvaal or Griqualand; collected by Sir Andrew Smith.
Purchased (*Warwick*), 1842.

640, *b*. Skin, mounted, immature. South Africa.
Presented by the Earl of Derby, about 1846.

46. 7. 11. 4. Skin, mounted, young. South Africa.
Purchased, 1846.

89. 4. 25. 1. Head-skin. South Africa; collected by Mr. C. Smith. *Purchased*, 1889.

640, *t*. Skull, with horns. South Africa. One horn distorted. *No history.*

46. 7. 2. 2. Skull, immature. South Africa.
Purchased, 1846.

640, *a*. Frontlet and horns. South Africa. *No history.*

61. 2. 30. 14. Frontlet and horns. South Africa; collected by Gen. T. Hardwicke.
Presented by the Hon. East India Co., 1861.

640, *h*. Frontlet and horns. South Africa. *No history.*

640, *d*. Frontlet and horns, female. South Africa.
No history.

48. 7. 13. 3–4. Two frontlets, with horns, female. South Africa. *Purchased*, 1848.

50. 8. 24. 7–8. Two frontlets, with horns. South Africa.
Purchased, 1850.

50. 8. 24. 9–10. Two frontlets, with horns, female. South Africa. *Purchased*, 1850.

50. 8. 24. 11. Skull-face, female. South Africa.
Same history.

56. 7. 9. 1. Young skull. South Africa.
Purchased (*Stevens*), 1850.

640, *l*. Very young skull. South Africa. *Purchased.*

2. 4. 24. 1–2. Two skulls, wanting the lower jaw, with horns. Natal frontier. *Purchased*, 1902.

6. * * *. Skull, with horns. Locality unknown.
Received 1906.

13. 11. 13. 1. Body-skin. Mountain-plateau, Basutoland, to which these hartebeests appear to have been driven from the adjacent lowlands. *Presented by R. Bosworth Smith, Esq.*, 1913.

93. 12. 17. 1. Skull, with horns, immature, stated to

be from a hybrid between the present species and *Damaliscus lunatus*. Tati Valley, Matabililand. The donor states (*Field*, vol. cxxii, p. 363, 1913) that the antelope to which this specimen pertained was shot in 1890 by Cornelius van Rooyen. While in general body-colour this antelope resembled a tsessebe, it had the comparatively bushy tail of a Cape hartebeest; the length of its head was intermediate between that of these two species, and its horns were unlike those of any other antelope.

Presented by F. C. Selous, Esq., 1893.

VIII. BUBALIS LICHTENSTEINI.

Antilope lichtensteini, *Peters*, *Mitth. Ges. nat. Freunde*, Dec. 18, 1849, *Reise nach Mossambique*, *Säugeth.* vol. i, p. 190, pl. xliii, xliv, 1852; *Giebel*, *Säugethiere*, p. 298, 1855; *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. v, p. 445, 1855.

Bubalis lichtensteini, *Temminck*, *Esquiss. Zool. Guiné*, p. 195, 1853; *Ward*, *Records of Big Game*, p. 63, 1892, ed. 6, p. 135, 1910; *Nicolls and Eglington*, *Sportsman in S. Africa*, p. 46, 1892; *Thomas*, *Proc. Zool. Soc.* 1892, p. 533, 1893, p. 504; *Sclater*, *ibid.* 1893, p. 506; *Lydekker*, *Horns and Hoofs*, p. 198, 1893, *Great and Small Game of Africa*, p. 133, 1899, *Game Animals of Africa*, p. 111, 1908; *Barkley*, *Proc. Zool. Soc.* 1894, p. 132; *Jackson*, *Big Game Shooting* (*Badminton Library*), vol. i, p. 290, 1894; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 45, pl. v, 1894; *Selous*, *Great and Small Game of Africa*, p. 160, 1899; *W. L. Sclater*, *Fauna S. Africa*, *Mamm.* vol. i, p. 134, 1900; *Letcher*, *Big Game N. E. Rhodesia*, p. 181, pl. 1911.

Alcelaphus lichtensteini, *Gerrard*, *Cat. Bones Mamm. Brit. Mus.* p. 243, 1862; *Gray*, *Cat. Ruminants Brit. Mus.* p. 44, 1872, *Hand-List Ruminants Brit. Mus.* p. 115, 1873; *Buckley*, *Proc. Zool. Soc.* 1877, p. 454; *Selous*, *ibid.* 1881, p. 763, *A Hunter's Wanderings in S. Africa*, p. 224, 1881; *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 139, 1887; *Crawshay*, *Proc. Zool. Soc.* 1890, p. 662; *Noack*, *Jahrb. Mus. Hamburg*, vol. ix, p. 11, 1891; *Lugard*, *East Africa*, p. 532, 1893.

Boselaphus lichtensteini, *Kirk*, *Proc. Zool. Soc.* 1864, p. 660.

(?) Bubalis leucoprymnus, *Matschie*, *Sitzber. Ges. nat. Freunde*, 1892, p. 137, *Säugeth. Deutsch-Ostafrika*, p. 108, 1895.

Sigmoceros lichtensteini, *Heller*, *Smithson*, *Misc. Collect.* vol. lx, no. 8, p. 4, 1912.

Type of *Sigmoceros*.

Typical locality Tette, Zambesia.

Size medium; shoulder-height about 4 feet. Horns,

which are supported on a very short and wide pedicle, relatively short and thick, with a somewhat S-like curvature, very broad and flattened at base, then bending sharply inwards at an angle of about 45°, and then inclined backwards, with the tips more or less nearly parallel; general colour fulvous, becoming distinctly rufous over a large area on back; chin, tail-crest (which reaches just below hocks, and occupies about three-quarters of length of tail),



Fig. 5.—Head of Lichtenstein's Hartebeest (*Bubalis lichtensteini*).

and front of fore-shanks and lower part of front of hind-shanks black or blackish; lower part of rump pale yellowish or dirty white, contrasting strongly with rufous of back; face-glands not tufted. Skull with a short frontal but an elongated nasal region, so that the total length (14¾ inches) is much the same as in *B. caama;* maximum width 7¼ inches. The horn-pedicle immediately above the plane of the hind margin of the occipital condyles, whereas

in other species the bifurcation takes place considerably behind this plane. Good horns measure from 21 to 23 inches along the front curve, with a girth of from 11 to 14, and a tip-to-tip interval of from 4½ to 20 inches.

The range occupies a large area in East Africa north of the Saba including Nyasaland, Mozambique, German East Africa to Usagara, and N.E. and N.W. Rhodesia.

86. 5. 5. 3. Skin, mounted. Sabi Valley, Mashonaland; collected by F. C. Selous, Esq., 20/7/85. *Purchased*, 1886.

86. 5. 5. 4. Skin, mounted. Same locality and collector (23/7/85). *Same history.*

81. 10. 28. 5. Head, mounted, and skull. Manica Plateau, north of the Zambesi; same collector. *Purchased*, 1881.

9. 5. 10. 1. Head, mounted. N.W. Rhodesia. *Presented by H. Pankhurst, Esq.*, 1909.

82. 5. 25. 4. Skull, female. Collected by F. C. Selous, Esq.; locality unknown. *Purchased*, 1882.

84. 7. 7. 3. Frontlet and horns, and remainder of skull, immature. Usagara, German East Africa; collected by Sir John Kirk. *Purchased*, 1884.

84. 11. 10. 2. Skull, with horns, and skin, immature. E. Africa; same collector. *Same history.*

88. 7. 4. 3. Head-skin and horns, female. Locality unknown. *Purchased*, 1888.

89. 7. 1. 3. Skull, with horns. Locality unknown. *Presented by Dr. A. Günther*, 1889.

88. 7. 1. 1. Scalp-skin and horns. Locality unknown. *Same history.*

89. 7. 1. 2. Scalp-skin and horns, female. Locality unknown. *Same history.*

92. 8. 1. 62. Skull, with horns, and skin. Zomba, Nyasaland. *Presented by Sir H. H. Johnston, G.C.M.G., K.C.B.*, 1892.

93. 7. 9. 21. Skull, with horns, and skin. Shiri Highlands. *Same donor*, 1893.

93. 7. 9. 22. Skull, with horns. Shiri Highlands; this and the two preceding specimens were collected by A. Whyte, Esq. *Same history.*

93. 6. 20. 2. Skull, with horns, female. Pangani (?). *Presented by J. Rowland Ward, Esq.*, 1893.

1. 4. 27. 10. Skull, with horns. Locality unknown.
Presented by Lieut.-Col. Manning, 1901.

7. 4. 12. 1. Skull, with horns, female. Barotsiland, N.W. Rhodesia. *Presented by J. Rowland Ward, Esq.*

8. 2. 14. 3. Skull, with horns. Between Diampwe and Gala Hill, S. Angoniland.
Presented by C. B. C. Storey, Esq., 1908.

8. 2. 14. 4. Skull, with horns. N. Angoniland.
Same history.

II. Genus DAMALISCUS.

Damalis, *Gray, Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 233, 1846, nec *H. Smith.*

Damaliscus, *Sclater and Thomas, Book of Antelopes*, vol. i, p. 51, 1894; *Pocock, Proc. Zool. Soc.* 1910, p. 902.

Beatragus, *Heller, Smithson. Misc. Collect.* vol. lx, no. 8, p. 8, 1912.

Nearly related to *Bubalis*, but withers generally less elevated, and the skull with the frontals not prolonged upwards to form a horn-pedicle, so that the parietal aspect looks upwards instead of backwards, and the face is shorter. Horns forming a simpler sigmoid curve, without a distinct "elbow" at the backward bend. Hair of face directed uniformly upwards; face-glands small and not tufted.

The range of the genus includes such portions of Ethiopian Africa (*i.e.* Africa south of the Atlas and the northern tropic) as are suited to the habits of its members.

The five species here recognised may be distinguished as follows:—

A. Tail-crest black; no spectacle-mark between eyes; 3 lower premolars.
 a. Lower segment of limbs partially white; face-blaze white in adult.
 a'. A white rump-patch *D. pygargus.*
 b'. No white rump-patch *D. albifrons.*
 b. Limbs wholly dark; face-blaze usually dark.
 a'. Horns directed mainly upwards, in a sublyrate form *D. korrigum.*
 b'. Horns bowed outwards at first, forming a lunate curve *D. lunatus.*

B. Tail-crest white; a white spectacle-mark between eyes; 2 lower premolars *D. hunteri.*

I. DAMALISCUS PYGARGUS.

Antilope dorcas, *Pallas*, *Misc. Zool.* p. 6, 1766, *nec* Capra dorcas, *Linn.*

Antilope pygarga, *Pallas*, *Spicil. Zool.* fasc. i, p. 10, 1767, fasc. xii, p. 15, 1777; *Erxleben*, *Syst. Regn. Anim.* p. 287, 1777; *Zimmermann*, *Geogr. Geschichte*, vol. ii, p. 119, 1780; *Gatterer*, *Brev. Zool.* vol. i, p. 82, 1780; *Schreber*, *Säugthiere*, pl. cclxxiii, 1784; *Boddaert*, *Elenchus Anim.* p. 143, 1785; *Gmelin*, *Linn.'s Syst. Nat.* vol. i, p. 187, 1788; *Kerr*, *Linn.'s Anim. Kingdom*, p. 311, 1792; *Donndorff*, *Zool. Beyträge*, p. 628, 1792; *Bechstein*, *Uebersicht vierfüss. Thiere*, vol. i, p. 87, vol. ii, p. 644, 1800; *Shaw*, *Gen. Zool.* vol. ii, pt. 2, p. 352, 1801; *Turton*, *Linn.'s Syst. Nat.* vol. i, p. 113, 1802; *Desmarest*, *Nouv. Dict. Hist. Nat.* vol. xxiv, p. 33, 1804, ed. 2, p. 186, 1816, *Mammalogie*, vol. ii, p. 456, 1822; *Cuvier*, *Dict. Sci. Nat.* vol. ii, p. 233, 1804; *Lichtenstein*, *Mag. nat. Freunde*, vol. vi, p. 106, 1814; *Fischer*, *Zoognosia*, vol. iii, p. 435, 1814; *Afzelius*, *Nova Acta Soc. Upsal.* vol. vii, p. 220, 1815; *Goldfuss*, *Schreber's Säugthiere*, vol. v, p. 1187, 1820; *Schinz*, *Cuvier's Thierreich*, vol. i, p. 388, 1821, *Synop. Mamm.* vol. ii, p. 402, 1845; *Desmoulins*, *Dict. Class. Hist. Nat.* vol. i, p. 443, 1822; *Burchell*, *List Quadr. presented to Brit. Mus.* p. 5, 1825; *Lesson*, *Man. Mamm.* p. 373, 1827; *Smuts. Enum. Mamm. Cap.* p. 73, 1832; *Owen*, *Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii, p. 633, 1868; *Waterhouse*, *Cat. Mamm. Mus. Zool. Soc.* p. 41, 1838; *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. iv, p. 412, 1844, vol. v, p. 447, 1855.

Capra cervicapra, *Müller*, *Natursyst.* vol. i, p. 414, 1773, nec *Linn.*

Antilope grisea, *Boddaert*, *Elenchus Anim.* p. 139, 1785.

Capra scripta, *Thunberg*, *Reise*, vol. ii, p. 50, 1789, *English Transl.* vol. ii, p. 44, 1793, *nec* Antilope scripta, *Pallas.*

Antilope maculata, *Thunberg*, *Mém. Ac. Sci. St. Pétersb.* vol. iii, p. 315, 1811.

Cerophorus (Gazella) pygarga, *Blainville*, *Bull. Soc. Philom.* 1816, p. 75.

Cervus pygargus, *Oken*, *Lehrbuch Naturgeschichte*, vol. iii, pt. 2, p. 738, 1816.

Antilope personata, *Woods*, *Zool. Journ.* vol. v, p. 2, 1835.

Gazella pygarga, *Harris*, *Wild Anim. S. Africa*, pl. xvii, 1840; *Gray*, *List Mamm. Brit, Mus.* p. 161, 1843.

Damalis pygarga, *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 233, 1846, *List Osteol. Brit. Mus.* p. 59, 1847, *Proc. Zool. Soc.* 1850, p. 141, *Knowsley Menagerie*, p. 21, 1850, *Cat. Ungulata Brit. Mus.* p. 127, 1852, *Cat. Ruminants Brit. Mus.* p. 45, 1872, *Hand-List Ruminants Brit. Mus.* p. 116, 1873; *Layard*, *Cat. S. African Mus.* p. 77, 1861, *Proc. Zool. Soc.* 1871, p. 625; *Gerrard*, *Cat. Bones Brit. Mus.* p. 244, 1862; *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 181, 1869; *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 140, 1887; *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 171, 1892; *Nicolls and Eglington*, *Sportsman in South Africa*, p. 32, 1892.

Bubalis pygarga, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 209, 1846; *Temminck, Esquiss. Zool. Guiné*, p. 195, 1852; *Brehm, Thierleben, Säugethiere*, vol. iii, p. 217, 1880; *Ward, Records of Big Game*, p. 69, 1892; *Lydekker, Horns and Hoofs*, p. 202, 1893.

Alcelaphus pygargus, *Sclater, List. Anim. Zool. Gardens*, p. 150, 1883; *Flower and Garson, Cat. Osteol. Mus. R. Coll. Surg.* pt. ii, p. 273, 1884; *Bryden, Kloof and Karroo*, p. 295, 1889, *Nature and Sport in S. Africa*, p. 265, 1897; *Flower and Lydekker, Study of Mammals*, p. 335, 1891.

Damaliscus pygargus, *Sclater and Thomas, Book of Antelopes*, vol. i, p. 73, pl. viii, 1895; *Lydekker, Great and Small Game of Africa*, p. 166, 1899, *Game Animals of Africa*, p. 121, 1908; *Selous, Great and Small Game of Africa*, p. 175, 1899; *W. L. Sclater, Fauna S. Africa, Mamm.* vol. i, p. 137, 1900; *Ward, Records of Big Game*, ed. 6, p. 145, 1910.

Damaliscus pygarga, *Pocock, Proc. Zool. Soc.* 1910, p. 903.

BONTEBOK.

The type species.

Typical locality Cape Colony; the range extending as far north as the Orange River.

Height at shoulder about 3 feet 4 inches.* General colour rufous fawn, darkening into blackish on crown of head, sides of face and neck, flanks, thighs, and fore part of rump, the latter tint also extending down front and outer sides of limbs to knees and hocks, above each of which it forms a garter; front of face in adult, hind portion of rump, inclusive of root of tail, and knees, hocks, and shanks (with the exception of a dark line down front surface) white; tail-crest, which reaches hocks, black. Horns sublyrate, without strongly marked basal divergence.

In immature animals the face-blaze is wholly slatey grey. Good horns measure from 15 to $16\frac{3}{4}$ inches in length, with a girth of from 6 to $6\frac{7}{8}$, and a tip-to-tip interval of from 5 to 10 inches. Skull-measurements practically the same as in *D. albifrons*.

39. 7. 25. 1. Skin, mounted. Cape Colony; collected by Dr. Smuts. *Purchased*, 1839.

39. 7. 25. 2. Skin, mounted, female. Cape Colony; same collector. *Purchased*, 1839.

96. 11. 28. 1. Skin, mounted. Nakhtwicht Farm, Bredasdorp, Cape Colony. *Presented by F. C. Selous, Esq.*, 1896.

* Nicolls and Eglington state that the height may reach as much as 3 feet 11 inches.

96. 11. 28. 2. Skin, mounted, female. Same locality.
Same history.

57. 9. 26. 124. Skin, mounted, young. South Africa.
Purchased (*Verreaux*), 1857.

43. 9. 27. 26. Skin, mounted, young. South Africa.
Purchased (*Brandt*), 1843.

57. 12. 21. 7. Skeleton. South Africa.
Presented by the Zoological Society, 1857.

51. 10. 23. 13. Skull, with horns. South Africa.
Purchased, 1851.

51. 10. 23. 14. Skull, with horns. S. Africa. *Same history.*

58. 3. 17. 4. Skull, with horns, female. South Africa.
Same history.

644, *a*. Single horn. Swellendam (?), Cape Colony; collected 17/1/1815. *Presented by Dr. W. J. Burchell about* 1817.

16, *f*. Skin, young, mounted. South Africa.
Purchased (*Warwick*).

II. DAMALISCUS ALBIFRONS.

Antilope albifrons, *Burchell, Travels in South Africa*, vol. ii, p. 335, 1824; *Wagner, Schreber's Säugthiere*, vol. iv, p. 413, 1844, vol. v, p. 448, 1855.

Gazella albifrons, *Harris, Wild Anim. S. Africa*, pl. xxi, 1840.

Damalis albifrons, *Gray, Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 233, 1846, *Proc. Zool. Soc.* 1850, p. 141, *Knowsley Menagerie*, p. 22, pl. xxii, fig. 1, 1850, *Cat. Ungulata Brit. Mus.* p. 129, 1852, *Cat. Ruminants Brit. Mus.* p. 45, 1872, *Hand-List Ruminants Brit. Mus.* p. 116, 1873; *Layard, Cat. S. African Mus.* p. 77, 1861; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 181, 1869; *Drummond, Large Game of S. Africa*, p. 425, 1875; *Nicolls and Eglington, Sportsman in S. Africa*, p. 31, 1892; *Jentink, Cat. Mamm. Leyden Mus.* (*Mus. Pays-Bas*, vol. xi) p. 171, 1892.

Bubalis albifrons, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 210, 1846; *Temminck, Esquiss. Zool. Guiné*, p. 195, 1853; *Brehm, Thierleben, Säugethiere*, vol. iii, p. 217, 1880; *Ward, Records of Big Game*, p. 68, 1892; *Lydekker, Horns and Hoofs*, p. 202, 1893.

Alcelaphus albifrons, *Buckley, Proc. Zool. Soc.* 1876, pp. 286 and 292; *Sclater, List Anim. Zool. Gardens*, p. 149, 1883; *Bryden, Kloof and Karroo*, p. 295, 1889; *Flower and Lydekker, Study of Mammals*, p. 335, 1891.

Damaliscus albifrons, *Sclater and Thomas, Book of Antelopes*, vol. i, p. 79, pl. ix, 1895; *Lydekker, Great and Small Game of Africa*, p. 166, 1899, *Game Animals of Africa*, p. 125, 1908; *Bryden, Great and Small Game of Africa*, p. 183, 1899; *W. L. Sclater,*

Fauna S. Africa, Mamm. vol. i, p. 141, 1900; *Renshaw, Final Nat. Hist. Essays*, p. 156, 1907; *Ward, Records of Big Game*, ed. 6, p. 147, 1910; *Pocock, Proc. Zool. Soc.* 1910, p. 900.

Blesbok.

Typical locality probably northern Cape Colony.

Very similar to *D. pygargus* but rufous colour much more predominant owing to the lighter shade of the areas which are dark in the latter species; the face-blaze divided by a narrow brown bar at the constriction between the eyes; the rump-patch reduced to a small paler area round the root of the tail, and dark colour continued down outer side of lower part of legs, so that hocks and outer side of knees are rufous fawn instead of white. The summits of the rings of the horns differ from those of the bontebok (*D. pygargus*) by being yellow, while the horns themselves show a greenish tinge. Good horns measure from 16 to 18¼ inches in length, with a girth of from 5¾ to 7¼, and a tip to-tip interval of from 7 to 15½ inches. Basal length of skull 11½ inches, maximum width 5 3/16 inches.

The range formerly included the northern plains of Cape Colony, the Orange River Colony, the Transvaal, Griqualand West, and Bechuanaland.

53. 8. 29. 48. Skin, mounted. South Africa; No. 373, *a*, of the Zoological Society's Catalogue of 1838.
Presented by the Zoological Society, 1853.

96. 11. 28. 3. Skin, mounted. Driefontein, Orange River Colony. *Presented by F. C. Selous, Esq.*, 1896.

96. 11. 28. 4. Skin, mounted, female. Same locality.
Same history.

6. 2. 22. 1. Head, mounted, young, to show dark face-blaze. *Presented by the Zoological Society*, 1906.

8. 5. 4. 1. Skin, female. North-western Orange River Colony. *Presented by W. F. Tuthill, Esq.*, 1908.

8. 12. 8. 1. Skull, with horns, and skin, female. Orange River Colony (?). *Presented*, 1908.

58. 3. 17. 3. Skull, with horns. S. Africa.
Purchased, 1858.

644, *c*. Frontlet and horns. S. Africa. *Purchased.*

48. 7. 13. 6. & 7. Two frontlets and horns. S. Africa.
Purchased, 1848.

48. 7. 13. 7. A similar specimen. S. Africa.
Same history.

50. 8. 24. 14–16. Three frontlets with horns, one female. S. Africa. *Purchased*, 1850.

47. 1. 7. 2. Frontlet and horns, female. S. Africa.
Purchased, 1847.

47. 1. 7. 3. Frontlet and horns, female. S. Africa.
Same history.

III. DAMALISCUS LUNATUS.

Antilope lunata, *Burchell*, *Travels in S. Africa*, vol. ii, p. 334, 1824, *List Quadr. presented to Brit. Mus.* p. 5, 1825; *Fischer*, *Synop. Mamm.* p. 642, 1830; *Owen*, *Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii, p. 633, 1868; *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. iv, p. 471, 1844, vol. v, p. 446, 1855; *Schinz*, *Synop. Mamm.* vol. ii, p. 444, 1845; *Giebel*, *Säugthiere*, p. 298, 1855.

Damalis lunata, *H. Smith*, *Griffith's Animal Kingdom*, vol. iv, p. 352, vol. v, p. 364, 1827; *Smuts*, *Enum. Mamm. Cap.* p. 89, 1832; *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 283, 1846, *List Osteol. Brit. Mus.* p. 59, 1847, *Proc. Zool. Soc.* 1850, p. 140, *Knowsley Menagerie*, p. 21, 1850, *Cat. Ungulata Brit. Mus.* p. 125, 1852, *Cat. Ruminants Brit. Mus.* p. 45, 1872, *Hand-List Ruminants Brit. Mus.* p. 115, 1873; *Gerrard*, *Cat. Bones Mamm. Brit. Mus.* p. 244, 1862; *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 180, 1869; *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 139, 1887, *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 171, 1892; *Nicolls and Eglington*, *Sportsman in S. Africa*, p. 33, 1892.

Acronotus lunatus, *A. Smith*, *S. African Quart. Journ.* vol. ii, p. 222, 1834; *Harris*, *Wild Anim. S. Africa*, pl. viii, 1840; *Gray*, *List Mamm. Brit. Mus.* p. 157, 1843, *List Osteol. Brit. Mus.* p. 59, 1847.

Bubalus lunatus, *A. Smith*, *Illustr. Zool. S. Africa*, pl. xxxi, 1841.

Bubalis lunatus, *Sundevall*, *K. Svenska Vet.-Ak. Handl.* 1844, p. 209, 1846; *Temminck*, *Esquiss. Zool. Guiné*, p. 195, 1853; *Drummond*, *Large Game of S. Africa*, p. 426, 1875; *Ward*, *Records of Big Game*, p. 66, 1892; *Lydekker*, *Horns and Hoofs*, p. 202, 1893; *Selous*, *Proc. Zool. Soc.* 1893, p. 1.

Alcelaphus lunatus, *Buckley*, *Proc. Zool. Soc.* 1876, p. 285; *Selous*, *ibid.* 1881, p. 764, *A Hunter's Wanderings in S. Africa*, p. 225, 1881; *Flower and Garson*, *Cat. Osteol. Mus. R. Coll. Surg.* pt. ii, p. 273, 1884.

Damaliscus lunatus, *Sclater and Thomas*, *Book of Antelopes*, vol. i, pl. x, 1895; *Lydekker*, *Great and Small Game of Africa*, p. 166, 1899, *Game Animals of Africa*, p. 128, 1908; *Vaughan Kirby*, *Great and Small Game of Africa*, p. 190, 1899; *W. L. Sclater*, *Fauna S. Africa*, *Mamm.* vol. i, p. 144, 1900; *Ward*, *Records of Big Game*, ed. 6, p. 150, 1910; *Letcher*, *Big Game N.E. Rhodesia*, p. 204, 1911.

Sassaby, or Tsesebe.

Type of *Damalis*, Gray.

Typical locality Cape Colony.

Size large; height at shoulder about 4 feet. General colour dark chestnut-rufous, with the front of face, shoulders, hips, outer sides of legs above knees and hocks purplish black, the black also forming a band on inner side of upper part of limbs, deeper in hind than in front pair; chin and muzzle paler than cheek; under-parts purplish rufous anteriorly, white posteriorly; shanks reddish brown. Horns strongly divergent in a lunate form; their direction being at first upwards and backwards, and then inwards and backwards; a slight lyration causes both bases and points to be directed slightly upwards, so that the lunate curve is somewhat irregular. Basal length of skull $14\frac{7}{8}$ inches, maximum breadth $6\frac{1}{4}$ inches. Good horns measure from 16 to $17\frac{1}{2}$ inches along the front curve, with a girth of from $7\frac{1}{4}$ to $8\frac{1}{2}$, and a tip-to-tip interval of from $11\frac{1}{4}$ to $13\frac{3}{4}$ inches.

The range comprises south-eastern Africa from north of the Orange River as far westward as Lake Ngami, and northwards to British Central Africa.

642, *a*. Frontlet and horns, female. Makhwarin Valley, near Lataku; killed 9/7/1812. Type.
Presented by Dr. W. J. Burchell, about 1817.

42. 4. 11. 5. Skin, mounted. S. Africa; collected by Sir Andrew Smith. *Purchased* (*Warwick*), 1842.

42. 4. 11. 5*. Skin, mounted, female. Same locality and collector. *Same history.*

98. 10. 11. 2. Skin, mounted. South Africa; collected by F. C. Selous, Esq. *Purchased*, 1898.

86. 5. 5. 10. Skeleton, with horns. Manyami Valley, Mashonaland; collected by F. C. Selous, Esq., 1886.
Purchased, 1886.

86. 5. 5. 11. Skeleton, with horns, female. Same locality and collector. *Purchased*, 1886.

83. 7. 28. 8. Skin, immature. Bili Valley, Mashonaland; same collector. *Purchased*, 1883.

50. 8. 24. 1. Frontlet and horns. S. Africa.
Purchased, 1850.

48. 7. 13. 5. Frontlet and horns. S. Africa.

Purchased, 1848.

9. 12. 4. 92. Skull, with horns. Mporokoso, south of Lake Tanganyika; collected by S. A. Neave, Esq.

Purchased, 1909.

0. 11. 18. 5. Facial portion of skull and horns. Between Lakes Bangweolo and Nyasa.

Presented by Sir Alfred Sharpe, K.C.M.G., C.B., 1900.

IV. DAMALISCUS KORRIGUM.

Antilope senegalensis, *Children, Denham and Clapperton's Travels, Append.* p. 192, 1826; *Wagner, Schreber's Säugthiere, Suppl*, vol. v, p. 447, 1855; nec *Cuvier.**

Damalis senegalensis, *H. Smith, Griffith's Animal Kingdom*, vol. iv, p. 351, vol. v, p. 363, 1827; *Gray, Ann. Mag. Nat. Hist.* ser. i, vol. xviii, p. 233, 1846, *List Osteol. Brit. Mus.* p. 59, 1847, *Proc. Zool. Soc.* 1850, p. 140, *Knowsley Menagerie*, p. 21, pl. xxi, 1850, *Cat. Ruminants Brit. Mus.* p. 45, 1872, *Hand-List Ruminants Brit. Mus.* p. 115, 1873; *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 244, 1862; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 181, 1869; *Matschie, Nat. Wochenschr.* 1894, p. 417.

Antilope korrigum, *Ogilby, Proc. Zool. Soc.* 1836, p. 103.

Damalis korrigum, *Gray, List Mamm. Brit. Mus.* p. 158, 1843, *List Osteol. Brit. Mus.* p. 145, 1847.

Bubalis senegalensis, *Temminck, Esquiss. Zool. Guiné*, p. 195, 1853; *Brehm, Thierleben, Säugethiere*, vol. iii, p. 217, 1880.

Alcelaphus senegalensis, *Lydekker, Field*, vol. lxxvii, p. 858, 1891.

Bubalis korrigum, *Lydekker, Horns and Hoofs*, p. 201, 1893.

* *Sclater and Thomas*, "Book of Antelopes," vol. i, p. 60, after referring to the mixing up of two distinct antelopes by Buffon in the description of his "koba," write as follows:—"The best course seems to be to ignore Buffon's animal altogether, and to reject the names *koba* and *senegalensis* that have been founded upon it, although there can be no doubt that the korrigum, as now described, is the *Antilope*, and *Damalis*, *senegalensis* of Children, Hamilton Smith, Gray, and many authors." In a foot-note it is added that the following are the chief references to the koba:—

La koba, *Buffon, Hist. Nat.* vol. xii, p. 210, but not p. 268, or the horn pl. xxxii, fig. 2.

Senegal Antelope, *Pennant, Syn. Mamm.* p. 38, 1764 (name and locality, but not description or woodcut of head, which refer to *Bubalis caama*).

Antilope koba, *Erxleben, Syst. Regn. Anim.* p. 293, 1777 (name from Buffon, description from Pennant).

Antilope senegalensis, *Cuvier, Dict. Sci. Nat.* vol. ii, p. 235, 1804.

Damaliscus korrigum, *Sclater and Thomas, Book of Antelopes*, vol. i, p. 59, pl. vii, 1895; *Matschie, Säugeth. Deutsch-Ostafrica*, p. 111, 1895.

Damaliscus corrigum, *Lydekker, Great and Small Game of Africa*, p. 166, 1899, *Game Animals of Africa*, p. 116, 1908; *Rendall, Great and Small Game of Africa*, p. 169, 1899; *Alexander, From Niger to Nile*, vol. ii, p. 391, 1907; *Cabrera, Proc. Zool. Soc.* 1910, p. 998; *Ward, Records of Big Game*, ed. 6, p. 139, 1910.

If this species be the true *Antilope koba* of Erxleben, its proper title would be *Damaliscus koba*, unless the name *A. koba* be regarded as too like *A. kob* to be admissable.

KORRIGUM, or TIANG.

Typical locality Bornu.

Size large; shoulder-height from about 4 feet to 4 feet 2 inches. General colour some shade of rich rufous, usually with a black blaze on the face, blue-black patches on the shoulders, hips, and thighs, which form garters on the limbs above the knees and hocks, a black tail-crest, no dark dorsal stripe, and the lower part of the limbs coloured more or less nearly like the body. Tail barely reaching hocks, with crest occupying terminal third. Horns thick, heavily ridged, and sublyrate in form, rising abruptly upwards and then curving backwards, with a regular and medium divergence; the extreme tips showing a tendency to recurve upwards. Good horns of the typical race measure from 24 to 28½ inches along the front curve, with a girth of from 9 to 10¾, and a tip-to-tip interval of from 4¾ to 14 inches.

The local races may be provisionally characterised as follows:—

A. Face-blaze black.
 a. A dark eye-streak.
 a'. Lower part of legs apparently coloured like body *D. k. korrigum.*
 b'. Lower part of legs tan; area round eye rufous; nose black *D. k. tiang.*
 c'. Area round eye and nose tan *D. k. selousi.*
 b. No dark eye-streak.
 a'. Colour brownish; limb-markings absent (?) *D. k. jonesi.*
 b'. Colour bright purplish rufous; limb-markings strongly developed *D. k. jimela.*
B. Face-blaze whitish buff or white *D. k. phalius.*

A.—Damaliscus korrigum korrigum.

Damaliscus corrigum typicus, *Lydekker, Great and Small Game of Africa*, p. 166, 1899, *Game Animals of Africa*, p. 117, 1908; *Ward, Records of Big Game*, ed. 6, p. 139, 1910.

KORRIGUM.

Typical locality Bornu.

General character those of species; body-colour rich full rufous, with the dark markings strongly pronounced; a narrow streak given off from the frontal blaze running backwards and upwards below and behind the eye; shanks apparently coloured much the same as body. Basal length of skull $14\frac{3}{4}$, greatest breadth $5\frac{3}{4}$ inches.

643, *a*. Skull, with horns. Bornu. Co-type.
Presented by Capt. H. Clapperton, R.N., and Col. C. Denham, about 1825.

643, *b*. Skull, with horns. Bornu. Co-type.
Same history.

643, *d*. Skull, with horns. Gambia; collected by Mr. T. Whitfield. *Presented by the Earl of Derby, about* 1845.

46. 10. 23. 12. Skull, with horns, female. Same locality and collector. *Same donor*, 1846.

46. 10. 23. 13. Skull, with horns, fœtal. Same locality and collection. *Same history.*

88. 8. 20. 5. Skull, with horns. Upper Gambia; collected by Dr. P. Rendall. *Purchased*, 1888.

7. 7. 8. 245. Skull, with horns, and head-skin. Ibi, Nigeria; collected during the Alexander-Gosling Expedition from the Niger to the Nile.
Presented by the Alexander-Gosling Expedition, 1907.

7. 7. 8. 246. Skull, with horns, immature. Same locality and collection. *Same history.*

4. 5. 21. 2. Skull, with horns, and skin. Lake Chad.
Presented by Lieut.-Col. Elliot, 1904.

13. 8. 3. 3. Skull, with horns, and skin. Upper Gambia.
Presented by G. Blaine, Esq., 1913.

13. 8. 3. 4. Skull, with horns, and head-skin. Same locality. *Same history.*

B.—Damaliscus korrigum tiang.

Bubalus lunatus, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1842, pp. 201 and 243, 1844, *nec* Antilope lunata, *Burchell.*

Bubalis koba, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 209, 1846, *nec* Antilope koba, *Erxleben.**

Damalis tiang, *Heuglin, Nova Acta Ac. Cœs. Leop.-Car.* vol. xxx, pt. 2, p. 22, pl. i, 1863; *Fitzinger, Sitzber. k. Ak. Wiss. Wien,* vol. lix, pt. 1, p. 181, 1869; *Gray, Cat. Ruminants Brit. Mus.* p. 45, 1872; *Matschie, Sitzber. Ges. nat. Freunde,* 1892, p. 136.

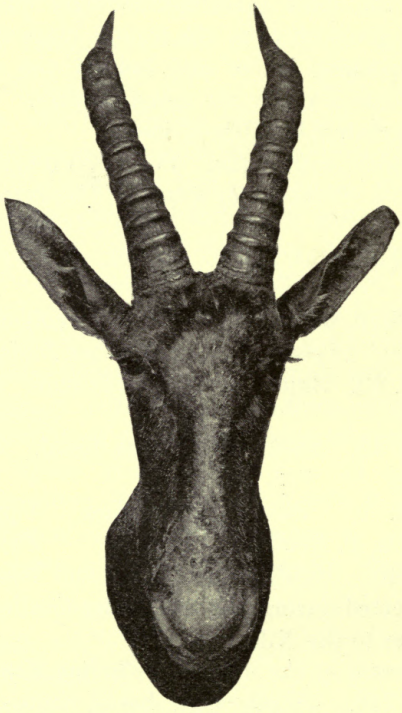


Fig. 6.—Head of Tiang (*Damaliscus korrigum tiang*).

Damalis tiang-riel, *Heuglin, op. cit.* p. 23, pl. ii, 1863; *Gray, Cat. Ruminants Brit. Mus.* p. 45, 1872.

Damalis senegalensis, *Heuglin, op. cit.* p. 22, 1863; *Gray, Ann. Mag. Nat. Hist.*, ser. 3, vol. iv, p. 29, p. 1869; *Baker, Ismailia,* pp. 68 and 74, 1874; nec *H. Smith.*

Damaliscus tiang, *Sclater and Thomas, Book of Antelopes,* vol. i, p. 63, 1895.

* See note on p. 39.

Damaliscus corrigum tiang, *Lydekker, Great and Small Game of Africa*, p. 166, 1899, *Game Animals of Africa*, p. 117, 1908; *Ward, Records of Big Game*, ed. 6, p. 141, 1910.
Damaliscus korrigum tiang, *Pocock, Proc. Zool. Soc.* 1910, p. 902.

TIANG.

Typical locality Sobat Valley.

Apparently differs from the typical race by the larger amount of black on the inner side of the limbs, and the bright tan of their lower segments, which thus differ markedly from the rufous of the body. There is, however, but one skin of the typical race in the collection for comparison. Nose black. Sclater and Thomas state, from the evidence of a single skull, that the tiang, as this race is called, is rather smaller than the korrigum, and the horns are decidedly shorter than those of the latter. Good horns measure from 19 to 22¼ inches along front curve, with a girth of from 7 to 9½, and a tip-to-tip interval of from 5¾ to 8 inches.

91. 8. 8. 48. Skin, mounted. Renk, Sudan.
Presented by R. McD. Hawker, Esq., 1891.

4. 7. 2. 1. Head, mounted (fig. 6). North-east Africa.
Bequeathed by H. Andrew, Esq., 1904.

9. 7. 8. 2. Skin. Between Tonga Island and Lake No, Bahr-el-Ghazal. *Presented by C. C. Tower, Esq.*, 1909.

60. 4. 20. 4. Skull, with horns, immature. Bahr-el-Ghazal; collected by Consul J. Petherick. *Purchased*, 1860.

59. 9. 23. 3. Skull, with horns, female. Ajak, Bahr-el-Ghazal; collected by Consul J. Petherick. *Same history.*

0. 8. 6. 5. Skull, with horns, young. Bahr-el-Ghazal.
Presented by Capt. S. S. Flower, 1900.

0. 8. 6. 6. Skull, with horns, female. Same locality.
Same history.

0. 8. 6. 4. Skin. White Nile. *Same history.*

98. 7. 2. 13. Skull, with horns, wanting lower jaw, North-east Africa. *Presented by H. Andrew, Esq.*, 1898.

99. 7. 1. 1. Skull, with horns, female. Faki Kowi, White Nile. *Presented by F. Burges, Esq.*, 1899.

0. 8. 7. 1. Skin. White Nile.
Presented by Major H. N. Dunn, 1900.

C.—Damaliscus korrigum selousi.

Damaliscus corrigum selousi, *Lydekker*, *Field*, vol. cx, p. 250, 1907, *Game Animals of Africa*, p. 117, 1908; *Ward*, *Records of Big Game*, ed. 6, p. 141, 1910.

Typical locality near Londiani Plateau on the borders of Uganda and B. E. Africa.

Differs from *D. k. tiang* by the bright tan of the nose and of the area round the eye, which is bordered inferiorly by the dark streak from the frontal blaze; the rest of the head being rufous brown.

7. 3. 11. 3. Head, mounted. Near Mau Escarpment, B. E. Africa. Type. *Presented by F. C. Selous, Esq.*, 1907.

D.—Damaliscus korrigum jonesi.

Damaliscus corrigum jonesi, *Lydekker*, *Field*, vol. cx, p. 250, 1907, *Game Animals of Africa*, p. 117, 1908; *Ward*, *Records of Big Game*, ed. 6, p. 141, 1910.

Typical locality Kordofan.

No dark streak running from frontal blaze below and behind eye, and neck browner * than in *tiang;* dark markings on upper part of limbs said to be wanting.

The korrigum and tiang (= "mud," Suaheli) inhabit swamps, but this race is stated to be native of waterless desert tracts.

7. 7. 12. 1. Head, mounted. Kordofan. Type.
Presented by Walter Jones, Esq., 1907.

E.—Damaliscus korrigum jimela.

Damalis senegalensis, *Sclater*, *Proc. Zool. Soc.* 1886, p. 176, 1890, p. 354; *Noack*, *Zool. Jahrb.* vol. ii, p. 208, 1887; nec *H. Smith.*

Damalis jimela, *Matschie*, *Sitzber. Ges. nat. Freunde*, 1892, p. 135; *O. Neumann*, *ibid.* 1900, p. 558.

Bubalis jimeru, *Lydekker*, *Horns and Hoofs*, p. 203, 1893, *errorim.*

Damaliscus jimela, *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 67, 1895; *Matschie*, *Säugeth. Deutsch-Ostafrika*, p. 111, 1895; *Drake-Brockman*, *Mammals of Somali.* p. 59, 1910.

Damaliscus corrigum jimela, *Lydekker*, *Great and Small Game of Africa*, p. 166, 1899, *Game Animals of Africa*, p. 118, 1908; *A. H. Neumann*, *Great and Small Game of Africa*, p. 171, 1899

* Not redder, as stated in *Field*, vol. cix, p. 864, 1907.

Ward, Records of Big Game, ed. 6, p. 143, 1910; *Roosevelt, African Game Trails*, p. 487, 1910.

Damaliscus korrigum jimela, *Pocock, Proc. Zool. Soc.* 1910, p. 903; *Cabrera, Cat. Met. Mamm. Mus. Madrid*, p. 125, 1912.

JIMELA.

Typical locality Juba Valley, between Italian Somaliland and British East Africa.

Differs from typical race by the darker and richer colouring and absence of a dark eye-stripe. General colour dark rich reddish brown, with a silky blue gloss; shoulders and thighs with large purplish black patches, which extend down fore-legs to form a garter above knee; no dark stripe extending from frontal blaze through eye. Dark markings absent in immature animals. Height at shoulder 4 feet to 4 feet 2 inches.

The range extends as far south as German East Africa and Uganda.

93. 4. 10. 4. Skin, immature, mounted. Malindi district, B.E.A.

Presented by Sir F. J. Jackson, K.C.M.G., C.B., 1893.

93. 6. 20. 1. Skin. Near Malindi, Africa; collected by Sir F. J. Jackson. *Presented by J. Rowland Ward, Esq.*, 1893.

5. 4. 3. 22. Skull, with horns and skin. S. Ankoli, Uganda. *Presented by Lieut.-Col. C. Delmé-Radcliffe*, 1905.

5. 4. 3. 23. Skin, female. S. Ankoli. *Same history.*

5. 4. 3. 24. Body-skin, apparently undergoing coat-change. S. Ankoli. *Same history.*

5. 4. 3. 25. Skin. S. Ankoli. *Same history.*

5. 4. 3. 26–28. Three skulls, with horns. S. Ankoli. *Same history.*

79. 11. 12. 16. Skull, with horns, female. Juba Valley; collected by Sir John Kirk, G.C.M.G., K.C.B. *Purchased*, 1879.

5. 2. 2. 18–19. Two skulls, with horns and skins. Ruaha Valley, G.E.A.

Presented by Sir Alfred Sharpe, K.C.M.G., C.B., 1905.

2. 4. 8. 2. Skull, with horns, wanting lower jaw. Kagora Valley, Ankoli. *Presented by Capt. Fisher*, 1902.

1. 8. 9. 63. Skull, with horns, and skin, provisionally referred to this race. Guasin-gishu Plateau, B.E.A.

Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1901.

13. 8. 2. 9. Skull and skin, female. Jubaland.
Presented by I. N. Dracopoli, Esq., 1913.

13. 8. 2. 7. Skull and skin, fœtus at term. Same locality. *Same history.*

F.—Damaliscus korrigum phalius.

Damaliscus phalius, *Cabrera*, *Proc. Zool. Soc.* 1910, p. 998.
Damaliscus corrigum phalius, *Lydekker*, *Game Animals of Africa*, *Suppl.* p. 6, 1911.
Damaliscus korrigum phalius, *Cabrera*, *Cat. Met. Mamm. Mus. Madrid*, p. 125, 1912.

Typical locality Guasin-gishu Plateau, north-western B. E. Africa.

Type in collection of Don Ricardo de la Huerta.

Allied to *D. k. jimela*, but distinguished by the whitish buff or white frontal blaze, which in old bulls is stated to be as white as in a blesbok.

No specimen in collection, unless No. 1. 8. 9. 63 (p. 45) be referable.

V. DAMALISCUS HUNTERI.

Cobus hunteri, *Sclater*, *Field*, vol. lxxiii, p. 260, 1889.
Damalis hunteri, *Sclater*, *Proc. Zool. Soc.* 1889, pp. 58 and 372, pl. xliii; *Hunter*, *Willoughby's East Africa*, p. 290, 1889.
Alcelaphus hunteri, *Lydekker*, *Field*, vol. lxxvii, p. 858, 1891.
Alcelaphus (Damalis) hunteri, *Flower and Lydekker*, *Study of Mammals*, p. 336, 1891.
Bubalis hunteri, *Ward*, *Records of Big Game*, p. 70, 1892; *Lydekker*, *Horns and Hoofs*, p. 200, 1893.
Damaliscus hunteri, *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 53, pl. vi, 1894; *Lydekker*, *Great and Small Game of Africa*, p. 166, 1899, *Game Animals of Africa*, p. 114, 1908; *Hunter*, *Great and Small Game of Africa*, p. 166, 1899; *Ward*, *Records of Big Game*, ed. 6, p. 137, 1910.
Beatragus hunteri, *Heller*, *Smithson. Misc. Collect.* vol. lx, no. 8, p. 8, 1912.

Herola, or Hunter's Hartebeest.

Type of *Beatragus*.

Typical (and only) locality, north side of Tana Valley, Jubaland.

Distinguished from other members of group by replacement of frontal blaze by a transverse white spectacle-like mark between the eyes, the white tail-crest, the reversal of

the direction of the hairs on the face, the doubly curved horns, and the presence of only two pairs of lower premolars.

Size medium (shoulder-height about 4 feet), and build relatively light and graceful. Colour wholly yellowish tawny, with the exception of the inside of the ears, a spectacle-like mark between the eyes, and the tail-crest, which are white. Horns long and slender, directed upwards

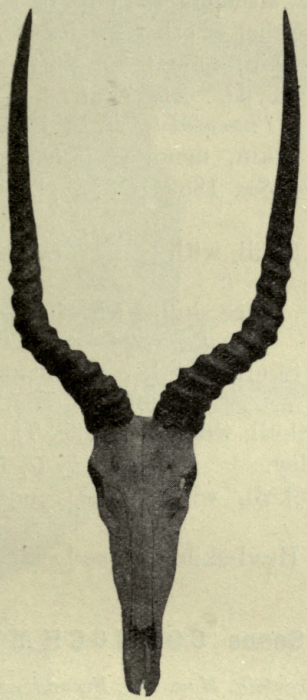


FIG. 7.—SKULL AND HORNS OF HEROLA OR HUNTER'S HARTEBEEST (*Damaliscus hunteri*).

and slightly outwards at base, then diverging and inclining backwards, and finally curving regularly forwards, so that the long smooth tips point directly upwards. Two pairs of premolar teeth in lower jaw. Skull relatively light and slender; basal length $12\frac{7}{8}$, maximum breadth $5\frac{1}{4}$ inches. Good horns measure from 20 to $26\frac{1}{2}$ inches along the front curve, with a girth of from $5\frac{1}{8}$ to $8\frac{1}{2}$, and a tip-to-tip interval of from $9\frac{3}{4}$ to $15\frac{1}{2}$ inches. In the skull the nasals are longer

than in the other members of the group, reaching to the front margin of the orbits, and are pointed (instead of truncated or blunt) at their junction with the frontals; the lachrymals are also longer, and the infraorbital foramina are divided. The last-named feature and the reduction of the premolars to two pairs are characters common to *Connochætes;* while the elongation of the nasals is a character allying the species to *Bubalis*, although the form of the occipital region of the skull is like that of other species of *Damaliscus.*

89. 8. 3. 8. Skin, mounted. Northern bank of Tana River, Jubaland. Type. Also skull.
Presented by H. C. V. Hunter, Esq., 1889.

89. 8. 3. 9. Skin, mounted, female. Same locality. Figured *Proc. Zool. Soc.* 1889, p. 372, pl. xlii, and woodcuts. Also skull. *Same history.*

89. 8. 3. 10. Skull, with horns. Same locality.
Same history.

3. 1. 13. 1–2. Three skulls, with horns. Tana Valley.
Presented by Dr. P. L. Sclater, 1903.

10. 4. 20. 6. Skull, with horns, female. Tana Valley.
Presented by T. J. Muir, Esq., 1910.

12. 7. 2. 6. Skull, with horns (fig. 7), and skin. Kinakomba, Tana Valley. *Presented by G. Blaine, Esq.*, 1912.

12. 7. 2. 7. Skull, with horns, and skin, female (?). Tana Valley. *Same history.*

12. 12. 7. 1. Head-skin. Same locality. *Same history.*

III. Genus CONNOCHÆTES.

Connochætes, *Lichtenstein, Mag. nat. Freunde*, vol. vi, p. 152, 1814; *Sclater and Thomas, Book of Antelopes*, vol. i, p. 93, 1895; *Lönnberg, K. Svenska Vet.-Ak. Handl.* vol. xxxv, No. 3, p. 43, 1901, *Arkiv Zool.* vol. v, No. 10, p. 21, 1909; *Pocock, Proc. Zool. Soc.* 1910, p. 904.

Cemas, *Oken, Lehrbuch Naturgesch.* vol. iii, *Zool.* pt. 2, p. 727, 1816.

Catoblepas, *H. Smith, Griffith's Animal Kingdom*, vol. iv, p. 366, 1827; *Rütimeyer, Abh. schweiz. pal. Ges.* vol. iv, p. 49, 1877.

Gorgon, *Gray, Proc. Zool. Soc.* 1850, p. 139.

Butragus, *Blyth, Gray, Cat. Ruminants Brit. Mus.* p. 43, 1872.

Relatively large and clumsily built antelopes, with moderate elevation of the withers, massive heads, and broad bristly muzzles. Face with a large tuft of thick black hair

between the face-glands, which are also tufted, but devoid of a central orifice leading to a hairy tube; nostrils widely

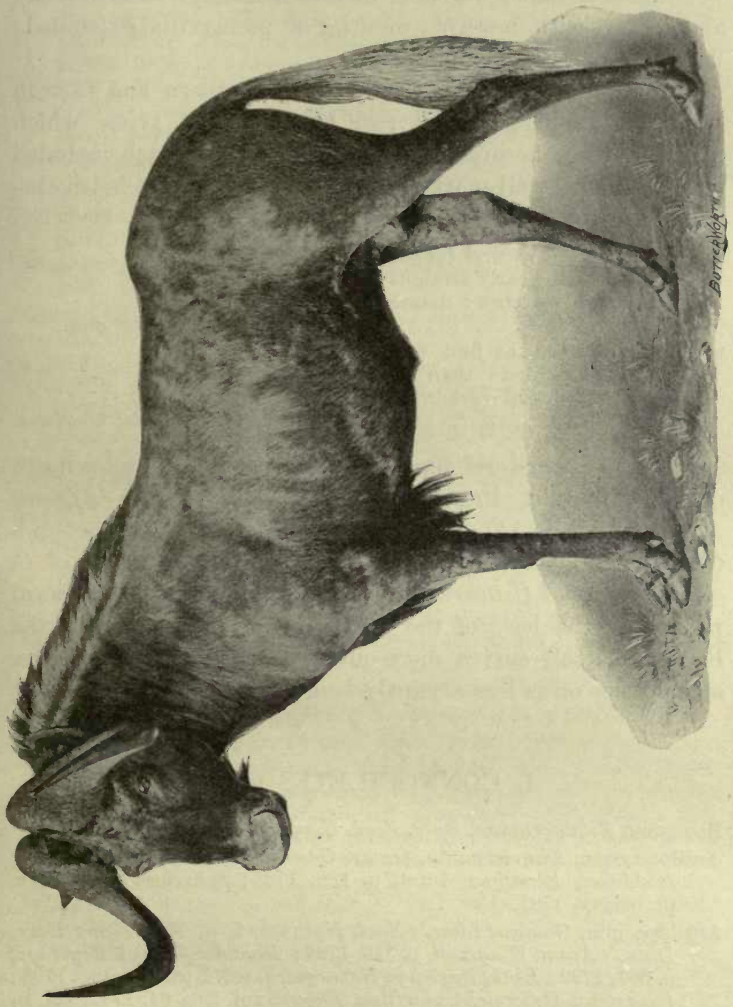


Fig. 8.—The Gnu (*Connochætes gnu*).

separated, hairy internally; neck maned; tail long-haired throughout, and terminal hairs nearly reaching the ground; teats two.* Horns smooth, thickened and expanded at base,

* In the *Book of Antelopes* the number is given incorrectly as 4: see Pocock, *loc. cit.*

directed at first either forwards and downwards or outwards, with the tips pointing upwards or upwards and inwards. No inguinal glands; glands in fore-feet only. Skull broad and heavy, with lower extremities of premaxillæ expanded; usually two pairs of premolars.

The genus, which is restricted to southern and eastern Africa, is represented by two very distinct types, which might well be accorded generic rank if they each included two or more well-marked species. They may be distinguished as follows:—

A. Horns directed at first forwards and downwards; back nearly straight; tail white; 14 dorsal vertebræ; nasals of median length *Connochætes gnu.*

B. Horns directed at first outwards; back higher at withers than at croup; tail black; 13 dorsal vertebræ; nasals elongated *Connochætes taurinus.*

From a prehistoric deposit at Haagenstad, 30 miles north of Bloemfontein, Broom has described (*Ann. S. African Mus.*, vol. xii, p. 14) an imperfect frontlet of an extinct gnu (*C. antiquus*), stated to be intermediate between that of *C. gnu* and that of *C. taurinus*. There is a prominent backward process at the base of the horn-core, as in *C. gnu*, but the horn-core itself curves more outwards than in that species, and further on is less abruptly bent upwards and backwards.

I. CONNOCHÆTES GNU.

Bos gnou, *Zimmermann, Spec. Zool. Geogr.* p. 372, 1772; misspelt.

Antilope gnou, *Zimmermann, Geogr. Geschichte*, vol. ii, p. 102, 1780; *Boddaert, Elenchus Anim.* p. 188, 1735; *Schreber, Säugthiere*, pl. cclxxx, 1787.

Antilope gnu, *Gmelin, Linn.'s Syst. Nat.* vol. i, p. 189, 1788; *Kerr, Linn.'s Anim. Kingdom*, p. 315, 1792; *Donndorff, Zool. Beyträge*, p. 634, 1792; *Link, Beyträge Naturgesch.* vol. i, pt. 2, p. 100, 1795; *Bechstein, Uebersicht vierfüss. Thiere*, vol. i, p. 64, 1792, vol. ii, p. 641, 1800; *Shaw, Gen. Zool.* vol. ii, pt. 2, p. 357, pl. cxcvi, 1801; *Turton, Linn.'s Syst. Nat.* vol. i, p. 114, 1802; *Desmarest, Nouv. Dict. Hist. Nat.* vol. ix, p. 516, 1803, ed. 2, vol. ii, p. 201, 1816; *Cuvier, Dict. Sci. Nat.* vol. ii, p. 247, 1804; *Illiger. Prodromus Syst. Mamm.* p. 106, 1811; *Lichtenstein, Mag. nat. Freunde*, vol. vi, p. 165, 1814; *G. Fischer, Zoognosia*, vol. iii, p. 418, 1814; *Afzelius, Nova Acta Soc. Upsal.* vol. vii, p. 219, 1815; *Goldfuss, Schreber's Säugthiere, Suppl.* vol. v, p. 1165, 1820; *F.*

Cuvier, Hist. Nat. Mamm. vol. i, livr. xvi, 1820; *Schinz, Cuvier's Thierreich*, vol. i, p. 399, 1821, *Synop. Mamm.* vol. ii, p. 445, 1845; *Desmoulins, Dict. Class. Hist. Nat.* vol. i, p. 442, 1822; *Burchell, List Quadr. presented to Brit. Mus.* p. 7, 1823; *Lesson, Man. Mamm.* p. 385, 1827; *J. B. Fischer, Synop. Mamm.* p. 475, 1829; *Owen, Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii, p. 633, 1868; *Waterhouse, Cat. Mamm. Mus. Zool. Soc.* p. 41 1838; *Oken, Allgemeine Naturgeschichte*, vol. vii, p. 1400, 1838 *Wagner, Schreber's Säugthiere, Suppl.* vol. iv, p. 473, 1844, vol. v, p. 448, 1855; *Giebel, Säugethiere*, p. 299, 1855.

Antilope capensis, *Gatterer, Brev. Zool.* vol. i, p. 80, 1780.

Bos gnu, *Thunberg, Mém. Ac. Sci. St. Pétersb.* vol. iii, p. 318, 1811.

Cerophorus (Boselaphus) gnu, *Blainville, Bull. Soc. Philom.* 1816, p. 75.

Cemas gnu, *Oken, Lehrbuch Naturgeschichte*, vol. iii, pt. 2, p. 728, 1816.

Antilope (Boselaphus) gnu, *Desmarest, Mammalogie*, vol. ii, p. 472, 1822.

Catoblepas gnu, *H. Smith, Griffith's Animal Kingdom*, vol. iv, p. 367, vol. v, p. 368, 1827; *Smuts, Enum. Mamm. Cap.* p. 93, 1832; *A. Smith, S. African Quart. Journ.* vol. ii, p. 224, 1834; *Lesson, Hist. Nat. Mamm.* p. 305, 1836; *Harris, Wild Anim. S. Africa*, pl. i, 1840; *Gray, List Mamm. Brit. Mus.* p. 154, 1843, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 282, 1846, *List Osteol. Brit. Mus.* p. 59, 1847, *Knowsley Menagerie*, p. 19, 1850, *Proc. Zool. Soc.* 1850, p. 138; *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 205, 1846; *Temminck, Esquiss. Zool. Guiné*, p. 195, 1853; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 182, 1869; *Murie, Proc. Zool. Soc.* 1870, p. 475; *Drummond, Large Game S. Africa*, p. 425, 1875; *Buckley, Proc. Zool. Soc.* 1876, pp. 286 and 292; *Brehm, Thierleben, Säugethiere*, vol. iii, p. 287, 1880; *Blaauw, Bull. Soc. Acclim.* ser. 4, vol. iii, p. 494, 1886, *Proc. Zool. Soc.* 1889, p. 2; *Bryden, Kloof and Karroo*, p. 293, 1889.

Catoblepas operculatus, *Brookes, Cat. Brookes Mus.* p. 64, 1828.

Bos connochætes, *Forster, Descrip. Anim.* p. 392, 1844.

Connochætes gnu, *Gray, Cat. Ungulata Brit. Mus.* p. 119, 1852, *Ann. Mag. Nat. Hist.* ser. 4, vol. iv, p. 291, 1869, *Cat. Ruminants Brit. Mus.* p. 43, 1872, *Hand-List Ruminants Brit. Mus.* p. 113, 1873; *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 243, 1862; *Sclater, List Anim. Zool. Gardens*, p. 150, 1883; *Huet, Bull. Soc. Acclim.* ser. 3, vol. ix, p. 678, vol. x, p. 95, 1883; *Flower and Garson, Cat. Osteol. Mus. R. Coll. Surg.* pt. ii, p. 274, 1884; *Jentink, Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 138, 1887, *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 170, 1892; *W. L. Sclater, Cat. Mamm. Ind. Mus.* pt. ii, p. 170, 1891, *Fauna S. Africa, Mamm.* vol. i, p. 148, 1900; *Flower and Lydekker, Study of Mammals*, p. 336, 1891; *Ward, Records of Big Game*, p. 74, 1892, ed. 6, p. 158, 1910; *Nicolls and Eglington, Sportsman in S. Africa*, p. 48, 1892; *Lydekker, Horns and Hoofs*, p. 205, 1893, *Great and Small Game of Africa*, p. 194, 1899, *Game Animals of Africa*, p. 130, 1908; *Sclater and Thomas, Book of Antelopes*, vol. i, p. 111, pl. xii, 1895; *Bryden, Great and Small Game of Africa*, p. 206, 1899; *Lönnberg, K. Svenska Vet.-Ak. Handl.* vol. xxxv, No. 3, p. 43,

1901; *Blaauw, Zool. Garten*, vol. xlvi, p. 6, 1905; *Pocock, Proc. Zool. Soc.* 1910, p. 904; *Heller, Smithson. Misc. Collect.* vol. lx, No. 8, p. 3, 1912.

Bubalus gnu, *Owen, Anat. Vertebrates*, vol. iii, p. 626, 1868.

Gnu, or Wildebeest.

The type species.

Typical locality Cape Colony.

Size relatively small; shoulder-height about 3 feet 10 inches. Back nearly straight, owing to elevation of croup; hairs of face-tuft directed upwards; a fringe on chin and between fore-legs, but not on throat. Horns directed at first forwards and downwards, but finally curving upwards (in young animals represented only by these upright tips). General colour dark brown or blackish, with the long hairs of the head and body black; tail whitish, except near the root, where it is coloured like the body. Skull with relatively short and wide nasals and no broad ascending process to premaxillæ; basal length 15½ inches, maximum width 6⅜ inches. Dorsal vertebræ 14. Good horns measure from 23 to 24 inches along the front curve, with a palm-breadth of from 7¼ to 8¼, and a tip-to-tip interval of from 11½ to 19½ inches.

The range formerly included Africa south of the Limpopo; but the species is now to a great extent exterminated in the wild state.

96. 11. 28. 5. Skin mounted, and skull. Mahemfontein, Orange River Colony; collected by F. C. Selous, Esq.
Purchased, 1896.

96. 11. 28. 6. Skin, mounted, female. Same locality and collector. Also skull. *Same history.*

96. 11. 28. 7. Skin, immature. Same locality and collector. *Same history.*

645, *a*. Skin, immature female, mounted. S. Africa.
Old collection.

46. 7. 2. 5. Skin, mounted, young. S. Africa.
Purchased, 1846.

2. 7. 18. 1. Skin, mounted, female. Orange River Colony. *Presented by C. D. Rudd, Esq.*, 1902.

2. 7. 18. 2. Skin, mounted, young. Same locality.
Same history.

69. 8. 11. 5. Head, mounted, and skull, young. S. Africa. *Purchased*, 1869.

50. 11. 22. 70. Skeleton, female. S. Africa. Skull, with horns, exhibited. *Purchased*, 1850.

59. 5. 6. 1. Skull, with horns. S. Africa. Length of horns 29¾ inches. *Presented by J. Butter, Esq.*, 1859.

58. 3. 17. 1. Skull, with horns. S. Africa. *Purchased*, 1858.

48. 6. 28. 2. Skull, with horns. S. Africa. *Purchased* (*Stevens*), 1848.

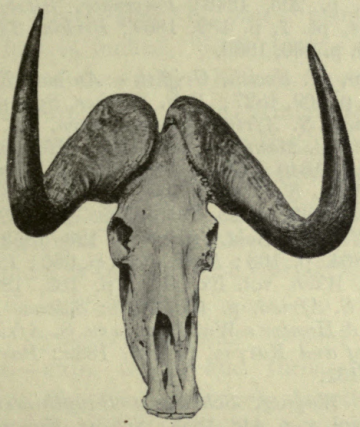


Fig. 9.—Skull and Horns of Gnu (*Connochætes gnu*).

48. 8. 29. 1. Skull, with horns. S. Africa. Length of horns 27¼ inches. *Purchased*, 1848.

645, *a*. Skull, with horns. S. Africa. *Presented by J. Hillier, Esq.*

6. 11. 16. 1. Skin. Prynnsberg, Orange River Colony. *Presented by C. Newberry, Esq.*, 1906.

6. 11. 16. 2. Skull, with horns. Prynnsberg. *Same history.*

6. 11. 16. 3. Skull, with horns. Same locality. *Same history.*

1. 7. 25. 1. Facial part of skull, with horns, and scalp-skin, immature. Boshof, Orange River Colony. *Presented by Lieut.-Col. A. H. Courtenay*, 1901.

II. CONNOCHÆTES TAURINUS.

Antilope taurina, *Burchell, Travels in S. Africa*, vol. ii, p. 278, 1824, *List Quadr. presented to Brit. Mus.* p. 7, 1825; *J. B. Fischer, Synop. Mamm.* p. 476, 1829; *Owen, Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii, p. 633, 1868; *Schinz, Synop. Mamm.* vol. ii, p. 447, 1845; *Giebel, Säugethiere*, p. 299, 1855.

Catoblepas taurinus, *H. Smith, Griffith's Animal Kingdom*, vol. iv, p. 369, vol. v, p. 368, 1827; *J. B. Fischer, Synop. Mamm.* p. 642, 1830; *Smuts, Enum. Mamm. Cap.* p. 94, 1834; *A. Smith, S. African Quart. Journ.* vol. ii, p. 233, 1834, *Illustr. S. African Zool.* pl. xxxviii, 1849; *Lesson, Hist. Nat. Mamm.* p. 305, 1836; *Gray, List Mamm. Brit. Mus.; Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 205, 1846; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 182, 1869; *Brehm, Thierleben, Säugethiere*, vol. iii, p. 290, 1880.

Catoblepas gorgon, *H. Smith, Griffith's Animal Kingdom*, vol. iv, p. 368, vol. v, p. 369, 1827; *J. B. Fischer, Synop. Mamm.* p. 643, 1830; *A. Smith, S. African Quart. Journ.* vol. ii, p. 233, 1834; *Lesson, Hist. Nat. Mamm.* p. 306, 1836; *Harris, Wild Anim. S. Africa*, pl. iv, 1840; *Gray, List Mamm. Brit. Mus.* p. 154, 1843, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 232. 1846, *Knowsley Menagerie*, p. 20, 1850, *Proc. Zool. Soc.* 1850, p. 139; *Temminck, Esquiss. Zool. Guiné*, p. 193, 1853; *Sclater, Proc. Zool. Soc.* 1864, p. 103; *Kirk, ibid.* p. 660; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. i, p. 182, 1869; *Drummond, Large Game S. Africa*, p. 425, 1875; *Selous, Proc. Zool. Soc.* 1881, p. 764, *A Hunter's Wanderings in S. Africa*, p. 226, 1881; *Bryden, Kloof and Karroo*, p. 293, 1889; *Barkley, Proc. Zool. Soc.* 1894, p. 131.

Antilope gorgon, *Wagner, Schreber's Säugthiere Suppl.* vol. iv, p. 474, 1844, vol. v, p. 448, 1855; *Schinz, Synop. Mamm.* vol. ii, p. 446, 1845; *Peters, Reise nach Mozambique, Säugeth.* p. 192, 1852; *Owen, Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii, p. 633, 1868.

Connochætes gorgon, *Gray, Cat. Ungulata Brit. Mus.* p. 121, 1852; *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 243, 1862.

Gorgon fasciatus, *Gray, Cat. Ruminants Brit. Mus.* p. 43, 1872, *Hand-List Ruminants Brit. Mus.* p. 114, 1873.

Butragus corniculatus, *Blyth, Gray Cat. Ruminants Brit. Mus.* p. 43, 1872.

Connochætes taurinus, *Sclater, List Anim. Zool. Gardens*, p. 150, 1883, *Proc. Zool. Soc.* 1900, pl. xlviii; *Flower and Garson, Cat. Osteol. Mus. R. Coll. Surg.* pt. ii, p. 275, 1884; *Jentink, Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 137, 1887, *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 170, 1892; *Crawshay, Proc. Zool. Soc.* 1890, p. 663; *Flower and Lydekker, Study of Mammals*, p. 336, 1891; *Nicolls and Eglington, Sportsman in S. Africa*, p. 47, 1892; *Ward, Records of Big Game*, p. 72, 1892, ed. 6, p. 151, 1910; *Lydekker, Horns and Hoofs*, p. 205, 1893, *Great and Small Game of Africa*, p. 194, 1899, *Game Animals of Africa*, p. 134, 1908; *Sclater and Thomas, Book of Antelopes*, vol. i, p. 95, pl. xi, 1895; *Matschie, Säugethiere Deutsch-Ost-*

afrika, p. 113, 1895; *Bryden, Great and Small Game of Africa*, p. 194, 1899; *W. L. Sclater, Fauna S. Africa, Mamm.* vol. i, p. 152, 1900; *Renshaw, Nat. Hist. Essays*, p. 87, 1904; *Letcher, Big Game N. E. Rhodesia*, p. 208, 1911.

Catoblepas reichei, *Noack, Zool. Anz.* 1893, p. 153.

Gorgon taurinus, *Pocock, Proc. Zool. Soc.* 1910, p. 906.

Connochætes taurius, *Heller, Smithson. Misc. Collect.* vol. lx, no. 8, p. 3, 1912.

Gorgon taurius, *Heller, op. cit.*

Brindled Gnu, or Blue Wildebeest.

Type of *Gorgon*.

Typical locality Bechuanaland.

Somewhat larger than *C. gnu;* shoulder-height from 4 feet 3 to 4 feet 4½ inches. Back sloping away from withers to croup; hairs of face-tuft, which is very large and bristly, directed downwards; no long fringe between fore-legs. Horns less expanded at base than in *C. gnu*, directed at first mainly outwards, and then curving upwards and inwards, in a fashion recalling those of the Cape buffalo. General colour ranging from pale grizzled roan to blackish slaty brown, with more or less distinct vertical dark stripes—most conspicuous in light-coloured races—on sides of neck and fore-quarters; typically the face—except for a paler area between eyes—chin, mane, and throat-fringe black; tail coloured above like back, inferiorly, together with the long hairs, black. Skull with long, *Bubalis*-like, nasals, and a broad ascending process to premaxillæ; length 18⅛, maximum width 7¾ inches. Dorsal vertebræ 13. Good horns measure from 30 to 33½ inches in outside span, with a length along front curve of from 20 to 23½, a palm-breadth of from 4 to 6½, and a tip-to-tip interval of from 16 to 26½ inches.

The range extends from the Vaal River through Zambesia and Nyasaland to German and British East Africa.

The local races are distinguishable as follows:—

A. Throat-fringe black.
 a. No frontal chevron *C. t. taurinus.*
 b. A whitish chevron (at least usually) below eyes *C. t. johnstoni.*

B. Throat-fringe more or less yellowish white.
 a. Some black hairs in throat-fringe..... *C. t. hecki.*
 b. Throat-fringe wholly yellowish white *C. t. albojubatus.*

A.—Connochætes taurinus taurinus.

Connochætes taurinus typicus, *Lydekker, Great and Small Game of Africa*, p. 194, 1899; *Ward, Records of Big Game*, ed. 6, p. 153, 1910.

Typical locality Bechuanaland.

Face and throat-fringe black; the former without a white chevron.

The range extends as far north as the Zambesi.

138, *b*. Skin, mounted, female. Madji Mountains, Bechuanaland. Type.

Presented by Dr. W. J. Burchell, about 1817.

42. 4. 11. 10–11. Two skins, one a young female. South Africa; collected by Sir Andrew Smith.

Purchased (*Warwick*), 1842.

11. 16. 12. 1. Skin, mounted. N. E. Rhodesia.

Presented by L. A. Wallace, Esq., C.M.G., 1911.

7. 7. 9. 1. Skin, mounted, young. Bred at Woburn, Beds. *Presented by the Duke of Bedford, K.G.*, 1907.

99. 6. 9. 1. Head, mounted. Africa.

Presented by W. Woodbyrne, Esq., 1899.

7. 2. 21. 1. Head, mounted. Bechuanaland.

Presented by J. W. Bowen, Esq., 1907.

86. 5. 5. 12. Skeleton, mounted. Sebakwi River, Mashonaland; collected by F. C. Selous, Esq.

Purchased, 1886.

89. 2. 4. 2. Frontlet and horns. Swaziland; collected by Morton Green, Esq. Maximum span 28 inches.

Purchased, 1889.

48. 7. 13. 1. Skull, with horns. S. Africa.

Purchased, 1848.

8. 3. 17. 4. Skull, with horns. Portuguese East Africa.

Presented by J. Rowland Ward, Esq., 1908.

7. 4. 12. 1. Skull, with horns. Barotsiland.

Presented by J. Rowland Ward, Esq., 1907.

6. 5. 2. 1. Skin. East bank of Loangwa River, Rhodesia.

Presented by H. Cookson, Esq., 1906.

6. 5. 2. 2. Skin. Same locality. *Same history.*

The following specimens may be racially distinct:—

10. 9. 26. 1–4. Three skulls, with horns, and four skins.

Locality unknown. In Nos. 2 and 3 much of the mane and throat-fringe is rufous brown, but in No. 1 these are almost wholly black. *Presented by C. H. B. Grant, Esq.*, 1910.

B.—Connochætes taurinus johnstoni.

Connochætes taurinus johnstoni, *Sclater, Proc. Zool. Soc.* 1896, p. 606; *Lydekker, Game Animals of Africa*, p. 136, 1908; *Ward, Records of Big Game*, ed. 6, p. 153, 1910.

Connochætes johnstoni, *de Beaux, Zool. Anz.* vol. xxxviii, p. 579, 1911.

(?) Connochætes taurinus (*vel* johnstoni) rufigianus, *de Beaux, Zool. Anz.* vol. xxxviii, p. 579, 1911.

Typical locality Nyasaland.

Characterised by the frequent or general presence of a white frontal chevron associated with a black throat-fringe; face mainly chestnut, and body-colour apparently browner than in typical race.

96. 4. 23. 1. Skull, with horns, and skin. South end of Lake Chilwa, Nyasaland. Type.

Presented by H. C. McDonald, Esq., 1896.

99. 6. 29. 5. Skull, with horns, but wanting lower jaw, and skin. Zomba, Nyasaland.

Presented by Sir Alfred Sharpe, K.C.M.G., C.B.

9. 6. 26. 4–5. Two head-skins. Nyasaland.

Presented by J. Rowland Ward, Esq., 1910.

C.—Connochætes taurinus hecki.

Connochætes hecki, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1905, p. 96.

Connochætes taurinus hecki, *Lydekker, Game Animals of Africa*, p. 136, 1908.

Typical locality Kibaya.

Type in collection of Dr. O. Neumann.

Stated to be closely related to next race, but to have some black hairs in the throat-fringe, and the face varying from greyish white to bright rufous.

No specimen in collection.

D.—Connochætes taurinus albojubatus.

Connochætes taurinus albojubatus, *Thomas, Ann. Mag. Nat. Hist.* ser. 6, vol. ix, p. 388, 1892; *Ward, Records of Big Game*, p. 75, 1892, ed. 6, p. 156, 1910; *Lydekker, Great and Small Game of Africa*, p. 194, 1899, *Game Animals of Africa*, p. 136, 1908, *Field*, vol. cxiv, p. 586, 1909; *Hollister, Smithson. Misc. Collect.* vol. lvi, no. 2, p. 3, 1910.

Connochætes albojubatus, *Sclater and Thomas, Book of Antelopes*, vol. i, p. 105, 1895; *Matschie, Säugethiere Deutsch-Ostafrika*, p. 113, 1895; *O. Neumann, Sitzber. Ges. nat. Freunde*, 1900, p. 558; *Lönnberg, K. Svenska Vet.-Ak. Handl.* vol. xlviii, no. 5, p. 150, 1912; *Roosevelt, African Game Trails*, p. 487, 1910.

Gorgon albojubatus, *Pocock, Proc. Zool. Soc.* 1910, p. 906; *Cabrera, Cat. Met. Mam. Mus. Madrid*, p. 125, 1912.

Including Gorgon taurinus mearnsi, *Heller, Smithson. Misc. Collect.* vol. lxi, no. 17, p. 1, 1913.

White-Bearded Gnu.

Typical locality Athi Plains, B. E. Africa.

Throat-fringe dirty yellowish white, and a few white hairs in mane; general colour typically paler than in *C. t. taurinus*, but in some cases very dark, being blackish slate on fore-quarters. A white frontal chevron may be present.

The type skull is stated to be rather wider and shorter than that of the typical race, but others are larger. The range extends from the Athi Plains to Ukambani, north of Kilimanjaro, and the west side of the Victoria Nyanza.

92. 6. 24. 2. Skull, with horns. Athi Plains, B. E. Africa. Type. Scalp in collection of donor.
Presented by Sir F. J. Jackson, K.C.M.G., C.B., 1892.

92. 10. 18. 4. Skin, mounted. Kilimanjaro; collected by Sir F. J. Jackson. *Purchased*, 1892.

8. 1. 8. 5. Head, mounted, light phase. Guaso-nyero Valley, B. E. Africa.
Presented by R. J. Cuninghame, Esq., 1908.

8. 1. 8. 6. Head, mounted, dark phase. Same locality.
Same history.

2. 11. 18. 3. Skull, with horns, and head-skin. Athi Valley. *Presented by R. Crawshay, Esq.*, 1902.

2. 11. 18. 4. Skull, with horns, and head-skin, female. Kilimakin, Ukamba. *Same history.*

0. 3. 18. 14. Skull, with horns, wanting lower jaw. Athi Plains. *Presented by S. L. Hinde, Esq.*, 1900.

0. 3. 18. 15. Skull, with horns, female. Same locality. *Same history.*

0. 3. 18. 16. Skin. Same locality. *Same history.*

0. 3. 18. 17. Skin. Same locality. *Same history.*

98. 1. 5. 14. Skin. Machakos, Athi Plains. *Same donor*, 1898.

7. 10. 4. 8. Skull, with horns, and skin. South of Mount Longonot, B. E. Africa. *Presented by H. Holmes Tarn, Esq.*, 1910.

8. 1. 31. 1–4. Four skins, wanting the head. Athi Valley. No. 2 is very dark. *Presented by the Master of Belhaven*, 1908.

8. 1. 31. 5. A similar specimen. Thika Valley, B. E. Africa. *Same history.*

8. 1. 8. 1–4. Four imperfect skins. Athi Plains. No. 2 is very dark; No. 3 is rather lighter on the hind-quarters, and No. 4 is everywhere considerably lighter, so that the brindle, which in the other specimens is only visible in certain lights, shows out plainly. *Presented by R. J. Cuninghame, Esq.*, 1908.

9. 3. 10. 1. Incomplete skin, female. South of Lake Naivasha, B.E.A. Medium in colour. *Same donor*, 1909.

63. 7. 7. 7. Head-skin and skull, with horns, young. Uzaramo. *Presented by Capt. J. H. Speke*, 1863.

63. 7. 7. 6. Skull, with horns, female. Same locality. *Same history.*

10. 6. 10. 4. Skull, with horns, immature. Lanjora, B. E. Africa. *Presented by Dr. W. J. Ansorge*, 1910.

93. 6. 20. 3. Skull, with horns, female. Kilimanjaro; collected by Sir F. J. Jackson. *Purchased*, 1893.

NOTE.

Catoblepas brookii, *H. Smith*, *Griffith's Animal Kingdom*, vol. iv, pl. facing p. 366, fig. 1, 1827, seems to be based on a horn of the domesticated cattle of Bornu, see *Lydekker*, *The Ox and Its Kindred*, p. 162, 1912.

Subfamily vi.—CEPHALOPHINÆ.

Size medium or small. Tail medium, slender, even-haired or tufted. Muzzle with a small bare muffle, and small nostrils. Face-glands placed nearly midway between eyes

and nostrils, not invaginated or valvular, but marked externally by bare streaks of skin serially studded with pores; foot-glands, which are present in both pairs of limbs of the general type of those of the *Bubalinæ*, and the web of the pasterns, which reaches only to the base of the hoofs, closely folded, and on the back devoid of hairs for a longer or shorter distance; hoofs normal; lateral hoofs well developed; inguinal glands present or absent; when present, widely separated from teats; teats 4.

Horns (which are probably heteronymous) frequently present in females; in both sexes relatively small, simply conical, in males with rugosities near the base, which is often thickened. Skull with lachrymal depressions, but no lachrymal vacuities or supraorbital pits; frontals prolonged backwards between parietals, with horns rising from the extemities of such projections. Upper molars brachyodont, with broad crowns. Vertebræ: C. 7, D. 14, L. 5, S. 4, Ca. 9–10.

The distributional area includes the greater part of Africa to the southward of the northern tropic.

Genus CEPHALOPHUS.

Cephalophus, *H. Smith*, *Griffith's Animal Kingdom*, vol. v, p. 344, 1827; *Rütimeyer*, *Abh. schweiz. pal. Ges.* vol. iv, p. 54, 1877; *Thomas*, *Proc. Zool. Soc.* 1892, p. 413; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 121, 1895; *Pocock*, *Proc. Zool. Soc.* 1910, p. 871.

Cephalolophus,* emendatio, *Wagner*, *Giebel*, *and others.*

General characters those of the subfamily (of which this genus is the sole representative). Head furnished with a tuft or crest of long bristly hair on the vertex, enveloping the bases of the horns, when these are present.

The genus may be divided into the following three subgeneric groups:—

A. Inguinal glands present, in the form of deep pouches, opening far away from the teats.
 a. Horns directed backwards in plane of face; ears short *Cephalophus.*
 b. Horns directed upwards and backwards so as to form an obtuse angle with plane of face; ears longer *Sylvicapra.*
B. Inguinal glands absent *Guevei.*

* In quoting references *Cephalophus* and *Cephalolophus* are taken as identical.

The following is a key to the 33 numbered species of the genus here recognised (some only provisionally):—

A. Horns (usually absent in female) directed upwards and backwards to form an obtuse angle with plane of face; ears relatively long and pointed. *C. grimmi*, including *C. leucoprosopus*, of which the right to distinction is not clear.

B. Horns (usually present in female) directed backwards in plane of face; ears medium or short, rounded.

A′. Size large; length of hind-foot (excluding hoof) more than 11 inches, or 280 mm.; basal length of skull exceeding 9½ inches (240 mm.).

a. General colour blackish, with triangular black patch on loins *C. sylvicultrix.*

b. General colour grey on body and black on head and neck *C. jentinki.*

B′. Size medium or small; length of hind-foot (exclusive of hoof) not exceeding 10¼ inches (260 mm.); basal length of skull not more than about 8¾ inches, or 220 mm.

A″. Inguinal glands present.

a. Hind-quarters transversely banded *C. doriæ.*

b. Hind-quarters not transversely banded.

a^1. Hair on part of nape directed forwards.

a^2. A black blaze on face.

a^3. Body-hair short and close..... *C. weynsi.*

b^3. Body-hair hicker and more woolly; colour darker *C. johnstoni.*

b^2. No black on face..... *C. brookei.*

a^2. Hair of nape directed uniformly backwards.

a^3. Colour tawny, rufous, or chestnut.

a^4. Colour uniform, no face-blaze.

a^5. Size larger *C. spadix.*

b^5. Size smaller; length of hind-foot, without hoof, 7⅝ inches (193 mm.).

a^6. Some black in crest *C. natalensis.*

b^6. Crest wholly red or orange ... *C. centralis.*

b^4. Dark markings on face or back, or on both.

a^7. Darker markings shiny black or brown.

a^8. Back rufous, no dorsal stripe.

a^9. Colour dark chestnut above and below *C. nigrifrons.*

b^9. Colour deeper and richer.

a^{10}. Chin white *C. rubidus.*

b^{10}. Chin dark *C. claudi.*

c^{9}. Colour pale bay, lighter below than above.
a^{11}. Forehead and tuft typically black in middle and chestnut on sides *C. harveyi.*
b^{11}. Forehead mainly rufous, tuft mahogany..... *C. ignifer.*
c^{11}. Tuft wholly chestnut..... *C. leopoldi.*
b^{8}. A black dorsal stripe.
a^{12}. Middle line of face darker than flanks ; dorsal stripe from nape.
a^{13}. Tail black and white ; back of hams rufous or white.
a^{14}. Back of hams white ; tail tufted *C. leucogaster.*
b^{14}. Back of hams rufous ; tail not tufted.
a^{15}. No white spot above eye.
a^{16}. Size larger *C. dorsalis.*
b^{16}. Size smaller..... *C. castaneus.*
b^{15}. A white spot above eye, continued as a line to nose *C. leucochilus.*
b^{12}. Face uniformly rufous yellow, like flanks ; dorsal stripe from withers *C. ogilbyi.*
b^{13}. Tail almost wholly black, as are hams *C. callipygus.*
b^{7}. Darker markings bluish grey *C. rufilatus.*
b^{3}. General colour smoky brown or blackish.
a. Face tawny, tending in some cases to rufous or black *C. niger.*
b. Face black *C. walkeri.*
B″. Inguinal glands wanting.
a. Legs greyish brown, like body.
a′. Rump not parti-coloured ; size larger..... *C. maxwelli.*
b′. Rump parti-coloured ; size smaller..... *C. melanorheus.*
b. Legs largely rufous ; rump not parti-coloured.
a^{1}. Size larger ; skull longer.
a^{2}. Amount of rufous on legs and of whitish on under-parts medium *C. monticola.*
b^{2}. More rufous on legs and body, and less white on under-parts *C. nyasæ.*
c^{2}. More white on under-parts than in *monticola* ; hoofs smaller *C. hecki.*
b′. Size smaller ; skull shorter ; otherwise much as in *nyasæ*..... *C. simpsoni.*
c. Legs brown ; size larger than in any other members of this subgroup *C. lugens.*

1. Subgenus CEPHALOPHUS.

Grimmia, *Laurillard, Dict. Univ. Hist. Nat.* vol. i, p. 623, 1841.
Terpone, *Gray, Proc. Zool. Soc.* 1871, p. 592.
Potamotragus, *Gray, Cat. Ruminants Brit. Mus.* p. 24, 1872.
Cephalophia, Cephalopidium, Cephalophelia, Cephalops, Cephalophela } *Knottnerus-Meyer, Arch. Naturgesch.* vol. lxxiii, pt. 1, p. 99, 1907, as subgenera.

Inguinal glands, in the shape of a pair of deep pouches opening considerably in advance of the teats, present; horns directed backwards in the plane of the face, usually absent in female; ears relatively small and rounded.

I. CEPHALOPHUS SYLVICULTRIX.

Antilope sylvicultrix, *Afzelius, Nova Acta Soc. Upsal.* vol. vii, p. 265, pl. viii, 1815; *Goldfuss, Schreber's Säugthiere*, vol. v, p. 1238, 1818; *Desmarest, Mammalogie*, vol. ii, p. 462, 1822; *Lesson, Man. Mamm.* p. 378, 1827; *J. B. Fischer, Synop. Mamm.* p. 457, 1829; *Waterhouse, Cat. Mamm. Mus. Zool. Soc.* p. 41, 1838.

Antilope silvicultrix, *Owen, Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii, p. 633, 1868.

Antilope (Cephalophus) sylvicultrix, *H. Smith, Griffith's Animal Kingdom*, vol. iv, p. 258, vol. v, p. 344, 1827; *Lesson, Hist. Nat. Mamm.* p. 293, 1836, *N. Table Règn. Anim., Mamm.* p. 178, 1842; *Gervais, Dict. Sci. Nat., Suppl.* vol. i, p. 262, 1840; *Wagner, Schreber's Säugthiere*, vol. iv, p. 446, 1844, vol. v, p. 422, 1855; *Giebel, Säugethiere*, p. 322, 1855.

Cephalophus sylvicultrix, *A. Smith, S. African Quart. Journ.* vol. ii, p. 214, 1834; *Gray, Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 163, 1846, *Knowsley Menagerie*, p. 10, pl. xxiii, fig. 3, 1850, *Proc. Zool. Soc.* 1850, p. 122, 1871, p. 595, *Cat. Ungulata Brit. Mus.* p. 83, 1852, *Cat. Ruminants Brit. Mus.* p. 26, 1872, *Hand-List Ruminants Brit. Mus.* p. 94, 1873; *Turner, Proc. Zool. Soc.* 1850, p. 170; *Temminck, Esquiss. Zool. Guiné*, pp. 194 and 233, 1853; *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 236, 1862; *Fitzinger, Sitzber. k. Ak. Wiss. Wien.* vol. lix, pt. 1, p. 166, 1869; *Sclater, Proc. Zool. Soc.* 1870, p. 222; *Jentink, Notes Leyden Mus.* vol. x, p. 20, 1888, vol. xxii, p. 179, 1901; *Büttikofer, Reisebilder Liberia*, vol. ii, p. 376, 1890; *Flower and Lydekker, Study of Mammals*, p. 338, 1891; *Matschie, Mitth. deutsch. Schutzgebiet*, vol. vi, p. 81, 1893; *Sclater and Thomas, Book of Antelopes*, vol. i, p. 125, pl. xiii, 1895; *Pocock, Proc. Zool. Soc.* 1910, p. 873.

Antilope (Grimmia) sylvicultrix, *Laurillard, Dict. Univ. Hist. Nat.* vol. i, p. 624, 1841.

Sylvicapra sylvicultrix, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 190, 1846.

Cephalophus punctulatus, *Gray, Knowsley Menagerie*, pl. viii, fig. 1, 1850.

Cephalophus longiceps, *Gray, Proc. Zool. Soc.* 1865, p. 204; *Bocage, J. Sci. Lisb.* vol. ii, p. 220, 1869.

Terpone longiceps, *Gray, Proc. Zool. Soc.* 1871, p. 502, *Cat. Ruminants Brit. Mus.* p. 24, 1872, *Hand-List Ruminants Brit. Mus.* p. 93, 1873.

Cephalophus melanoprymnus, *Gray, Proc. Zool. Soc.* 1871, p. 594, pl. xliv.

Potamotragus melanoprymnus, *Gray, Cat. Ruminants Brit. Mus.* p. 25, 1872, *Hand-List Ruminants Brit. Mus.* p. 94, 1873.

Cephalophus ruficrista, *Bocage, Proc. Zool. Soc.* 1878, p. 744.

Cephalophus sylvicultor, *Thomas, Proc. Zool. Soc.* 1892, p. 416, 1902, vol. i, p. 1; *Ward, Records of Big Game*, p. 77, 1892, ed. 6, p. 167, 1910; *Lydekker, Horns and Hoofs*, p. 213, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 144, 1908; *Jentink, Notes Leyden Mus.* vol. xxii, p. 187, 1901; *Alexander, From Niger to Nile*, vol. ii, p. 391, 1907.

Cephalophus thomasi, *Jentink, Notes Leyden Mus.* vol. xxii, p. 187, 1901; a provisional name for Congo form.

Cephalophus sclateri, *Jentink, op. cit.* 1901; a provisional name for a skull with curved horns.

Cephalophus coxi, *Jentink, Notes Leyden Mus.* vol. xxviii, p. 117, 1906; *Lydekker, Game Animals of Africa*, p. 146, 1908.

Cephalophus ituriensis, *M. Rothschild and Neuville, C. R. Ac. Sci. Paris*, vol. cxliv, p. 98, 1907; *Lydekker, Game Animals of Africa*, p. 147, 1908.

Cephalophus sylvicultor coxi, *Ward, Records of Big Game*, ed. 6, p. 167, 1910.

YELLOW-BACKED DUIKER.

The type species; also type of *Terpone* and *Potamotragus*. Typical locality Sierra Leone.

Size largest of the group; shoulder-height 34 inches; length of ear 4, of hind-foot 13½ inches. Form stout and heavy; ears short, broad, and rounded, their length much inferior to distance between eye and muzzle; coat very short on fore-quarters, longer on loins, but in adult worn away so as to expose whitish under-fur or skin; general colour dark blackish brown; crest, which is fully developed only in sub-adult individuals, orange or rufous; muzzle, cheeks, chin, and ear-tips whitish; a broad triangular pale yellowish area on loins, extending forwards to middle of back; in young animals the hairs of this yellow area tipped with black, while those of rest of body have white tips. Horns, of which good

specimens grow to 6½ inches in length, relatively large, divergent, slender, evenly tapering, and somewhat roughened at base. Skull relatively slight, slender, and long, with median palatal notch in advance of lateral ones; basal length 10¼, maximum width 4⅞, interval between muzzle and orbit 6½ inches. The range extends from the west coast through the forest-zone to N. E. Rhodesia. The characters given by their describers as respectively distinctive of the N. E. Rhodesian

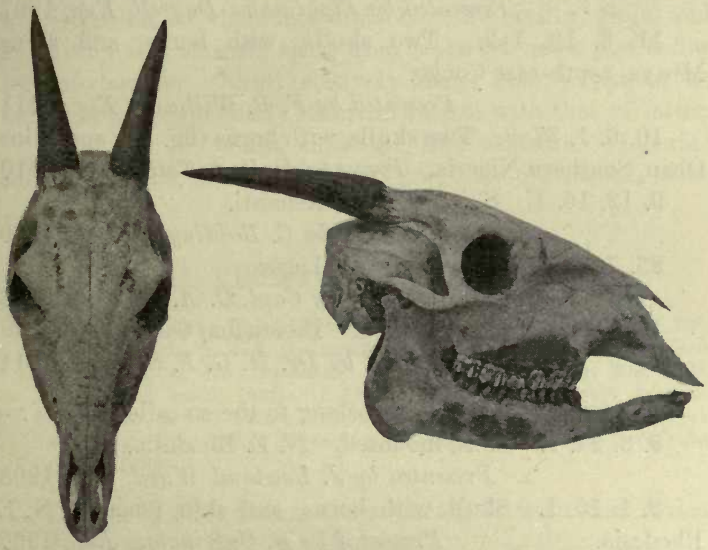


FIG. 10.—FRONT AND SIDE VIEWS OF SKULL AND HORNS OF YELLOW-BACKED DUIKER (*Cephalophus sylvicultrix*).

C. coxi and the Ituri *C. ituriensis* do not appear to be even of racial value. If *ituriensis* were a distinct race it is quite probable that it would be inseparable from *thomasi*.

78. 7. 16. 3. Skin, mounted. Fanti. Also skull. *Purchased*, 1878.

64. 12. 1. 12. Skull, with horns, and skin. Gabun; collected by Monsieur P. du Chaillu. Type of *C. longiceps*. *Purchased*, 1864.

71. 5. 27. 1. Skull, with horns, and skin. Same locality and collector. Type of *C. melanoprymnus*. *Purchased*, 1871.

55. 12. 26. 161. Skull, with horns, and skin. Sierra Leone. Described and skull figured by Gray, *Proc. Zool. Soc.*, 1871, p. 594. *Purchased*, 1855.

78. 7. 16. 4. Skull, with horns, and skin. Fanti.
Purchased, 1878.

88. 7. 4. 4. Skeleton, female. Fanti. *Purchased*, 1888.

44. 9. 7. 2. Skull, with horns, and skin, immature. Sierra Leone. *Presented by the Earl of Derby*, 1844.

6. 6. 13. 7. Skin. West Africa.
Purchased (*Stevens*), 1863.

7. 1. 8. 11. Skull, with horns, female. Southern Nigeria.
Presented by Elphinstone Dayrell, Esq., 1907.

11. 3. 19. 1–2. Two skulls, with horns, and skins. Mbaya, south-east Congo.
Presented by F. R. Williams, Esq., 1911.

10. 6. 1. 37–8. Two skulls, with horns (fig. 10), and skins. Oban, Southern Nigeria. *Presented by P. A. Talbot, Esq.*, 1910.

0. 12. 15. 1. Skin. Prang, Ashanti.
Presented by C. Beddington, Esq., 1900.

83. 7. 27. 1. Skin, young. Lagos.
Presented by Capt. C. A. Moloney, 1883.

11. 6. 2. 12. Skin, young. Bibianaha, Gold Coast.
Presented by Dr. H. G. F. Spurrell, 1911.

The following specimens belong to the so-called *C. eoxi*:—

8. 3. 24. 1. Skin, mounted. N. E. Rhodesia.
Presented by J. Rowland Ward, Esq., 1908.

2. 1. 16. 1. Skull, with horns, and skin, female. N. E. Rhodesia. *Presented by R. Codrington, Esq.*, 1902.

3. 12. 18. 1. Skull, with horns, and skin. Kambovi, N. W. Rhodesia. *Presented by G. Milstead, Esq.*, 1903.

II. CEPHALOPHUS JENTINKI.

Antilope (Terpone) longiceps, *Jentink*, *Notes Leyden Mus.* vol. vii, p. 272, pl. x, 1885, nec *Gray*.

Terpone longiceps, *Jentink*, *op. cit.* vol. x, p. 19, 1888, *Cat. Mamm. Leyden Mus.* (*Mus. Pays-Bas*, vol. xi) p. 158, 1892; *Büttikofer*, *Reisebilder Liberia*, vol. ii, p. 374, 1890.

Cephalophus jentinki, *Thomas*, *Proc. Zool. Soc.* 1892, p. 417; *Lydekker*, *Horns and Hoofs*, p. 213, 1893, *Great and Small Game of Africa*, p. 148, 1908; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 131, pl. xv, 1895; *Rendall*, *Great and Small Game of Africa*, p. 216, 1899; *Jentink*, *Notes Leyden Mus.* vol. xxii, p. 183, 1901.

JENTINK'S DUIKER.

Typical locality Liberia.

In size somewhat inferior to *sylvicultrix*, but general build similar; shoulder-height about 30 inches, length of ear 4, of hind-foot 12 inches. Head (exclusive of lips, chin, and inside of ears), neck, and chest-stripe black; behind this dark area the general colour is dark grizzled grey, owing to the black and white ringing of the hairs, except for a whitish collar on shoulders and chest, the axillæ, groin, and legs being also whitish, apart from a darker mark just below base of shoulder. Skull relatively longer than in *sylvicultrix*, being, in fact, practically identical in size with that of latter.

89. 7. 31. 1. Skin, mounted, and skeleton. Liberia; collected by Dr. J. Büttikofer. Type. *Purchased*, 1889.

III. CEPHALOPHUS SPADIX.

Cephalophus spadix, *True*, *Proc. U.S. Nat. Mus.* vol. xiii, p. 227, 1890, vol. xv, p. 473, p. lxxviii and lxxix; *Thomas*, *Proc. Zool. Soc.* 1892, p. 418; *Lydekker*, *Horns and Hoofs*, p. 209, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 116, 1908; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 135, 1895; *Matschie*, *Säugethiere Deutsch-Ostafrika*, p. 116, 1895.

Typical locality Kilimanjaro district, German East Africa. Type in U.S. National Museum.

Size relatively large, but shoulder-height not given; length of ear 4½, of hind-foot, without hoof, 9½ inches. General colour dusky chestnut-brown, as dark below as above; forehead dusky brown, like body; chin and throat pale greyish brown; hairs of crest mostly chestnut-red with black tips, but some uniformly dusky and others white; legs somewhat lighter in front than behind; tail dusky, except for a few white hairs at tip. Basal length of skull 8½ inches; maximum width 4 inches, length of nasals 3⅝ inches.

9. 8. 13. 1. Skull, with horns, and skin. Shuma Forest, Tanga, G. E. Africa.

Presented by J. Rowland Ward, Esq., 1909.

IV. CEPHALOPHUS NATALENSIS.

Cephalophus natalensis, *A. Smith, S. African Quart. Journ.* vol. ii, p. 217, 1834, *Illustr. Zool. S. Africa, Mamm.* pl. xxxii, 1841; *Gray, Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 166, 1846, *Knowsley Menagerie*, p. 10, 1850, *Proc. Zool. Soc.* 1850, p. 123, 1871, p. 598, *Cat. Ungulata Brit. Mus.* p. 85, 1852, *Cat. Ruminants Brit. Mus.* p. 27, 1872, *Hand-List Ruminants Brit. Mus.* p. 96, 1873,; *Turner, Proc. Zool. Soc.* 1850, p. 170; *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 236, 1862; *Blyth, Cat. Mamm. Mus. Asiat. Soc. Bengal*, p. 168, 1863; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 166, 1869; *Drummond, Large Game S. Africa*, p. 391, 1875; *W. L. Sclater, Cat. Mamm. Ind. Mus.* pt. ii, p. 168, 1891, *Fauna S. Africa, Mamm.* vol. i, p. 161, 1900; *Jentink, Cat. Mamm. Leyden Mus.* (*Mus. Pays-Bas*, vol. xi) p. 162, 1892; *Nicolls and Eglington, Sportsman in S. Africa*, p. 23, 1892; *Thomas, Proc. Zool. Soc.* 1892, p. 419; *Ward, Records of Big Game*, p. 77, 1892, ed. 6, p. 165, 1910; *Lydekker, Horns and Hoofs*, p. 209, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 149, 1908; *Sclater and Thomas, Book of Antelopes*, vol. i, p. 139, 1895; *Lönnberg, Arkiv Zool.* vol. v, no. 10, p. 2, 1909; *Wroughton, Ann. Mag. Nat. Hist.* ser. 8, vol. viii, p. 277, 1911.

Cephalophorus natalensis, *Gray, List Mamm. Brit. Mus.* p. 163, 1843.

Sylvicapra natalensis, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 190, 1846.

Antilope (Cephalolophus) natalensis, *Wagner, Schreber's Säugthiere, Suppl.* vol. iv, p. 453, 1844, vol. v, p. 426, 1855; *Giebel, Säugethiere*, p. 321, 1855.

NATAL DUIKER.

Typical locality Natal.

Size relatively small; shoulder-height about 17 inches, length of ear $2\frac{1}{2}$, of hind-foot $7\frac{5}{8}$ inches. Build slender; colour uniformly tawny or chestnut, with a faintly marked redder streak over eyebrows, the back of neck greyish brown, and the chin and throat whitish; tail slender, rufous at root, brown, tipped with white, at extremity; horns much thickened at base, and attaining a length of about 3 inches in good specimens. Basal length of skull $5\frac{5}{8}$ inches, maximum width, $2\frac{3}{4}$, length from orbit to muzzle $3\frac{3}{8}$ inches.

The following races have been named :—

A. Size small, length of hind-foot usually less than $7\frac{7}{8}$ inches (199 mm.); colour dark; ears short, 3 inches (76 mm.).
 a. General colour tawny, with nape pale slaty grey *C. n. natalensis.*
 b. General colour richer, redder on back and yellower on flanks with nape nearly black *C. n. amœnus.*

B. Size larger, length of hind-foot exceeding 7⅛ inches (199 mm.); colour paler; ears longer, 3½ inches (84 mm.).
 a. General colour tawny ochery, paler beneath ... *C. n. robertsi.*
 b. General colour paler, dirty white beneath *C. n. bradshawi.*

A.—Cephalophus natalensis natalensis.

Typical locality Natal.

Size small, with ears not exceeding 76 mm. General colour, with paler under-parts; throat as far back as ears white, elsewhere, together with chest and cheeks, lighter than under-parts; nape pale slaty grey, with a brownish tinge; a greyish tint on face above nostrils.

42. 4. 11. 4. Skull and skin, female. Natal. Type. *Purchased* (*South African Museum*), 1842.

49. 3. 26. 2. Skull, immature, female. S. Africa. Figured in "Cat. Ungulata Brit. Mus.," p. 85, pl. x, fig. 1. *Purchased*, 1847.

40. 6. 24. 11. Skull, with horns, and skin. Natal; collected by Dr. A. Krauss. *Purchased*, 1840.

4. 12. 3. 92. Skull, with horns, and skin. Umvolosi Valley, Zululand; collected by Mr. C. H. B. Grant. *Presented by C. D. Rudd, Esq.*, 1904.

4. 12. 3. 93. A similar specimen. Same locality and collector. *Same history.*

97. 1. 5. 1. Skin. South Africa. From the collection of Sir Victor Brooke, Bart. *Presented by Sir Douglas Brooke, Bart.*, 1897.

B.—Cephalophus natalensis amœnus.

Cephalophus natalensis amœnus, *Wroughton, Ann. Mag. Nat. Hist.* ser. 8, vol. viii, p. 277, 1911; *Lydekker, Game Animals of Africa, Suppl.* p. 8, 1911.

Typical locality Barberton, Transvaal.

General colour darker than in typical race, with the back redder, the flanks yellower, the under-parts scarcely lighter than back, and the lower part of throat rather paler than under-parts; nape nearly black. Length of tail 3⅝ inches (89 mm.), of hind-foot 7⅛ (199 mm.), of ear 3 (76 mm.)

inches; length of skull $5\frac{7}{8}$ inches (143 mm.), maximum breadth $2\frac{7}{8}$ (72 mm.); length of row of upper cheek-teeth $1\frac{3}{4}$ inches (44 mm.).

94. 11. 4. 1. Skin, mounted. De Kaap, Barberton, Transvaal. *Presented by Dr. P. Rendall*, 1894.

94. 11. 4. 2. Skull, with horns, and skin. Moodies, Barberton. *Same history.*

9. 11. 4. 3. Skull and skin, female. De Kaap. *Same history.*

6. 11. 7. 13. Skull, with horns, and skin. Legogot, Barberton; collected by Mr. C. H. B. Grant. Type. *Presented by C. D. Rudd, Esq.*, 1906.

6. 11. 7. 14. Skull, with horns, and skin. Same locality and collector. *Same history.*

6. 11. 7. 15. Skull and skin, female. Same locality and collector. *Same history.*

C.—Cephalophus natalensis robertsi.

Cephalophus robertsi, *Rothschild*, *Proc. Zool. Soc.* 1906, p. 691.

Cephalophus natalensis vassei, *Trouessart*, *Bull. Mus. Paris*, 1907, p. 443.

Cephalophus natalensis robertsi, *Wroughton*, *Ann. Mag. Nat. Hist.* ser. 8, vol. viii, p. 278, 1911; *Lydekker*, *Game Animals of Africa*, *Suppl.* p. 9, 1911.

Typical locality Portuguese East Africa.

Type in Tring Museum.

Size rather larger than in typical race. General colour tawny ochery, paler and yellower than in the latter, and lower part of throat only slightly tinged with rufous; underparts lighter than back; nape darker than in typical race, the hairs where the dark nape-patch fades into the general colour being distinctly ringed with dark slate and ochery; an ash-grey patch above nostrils, which is absent in *n. natalensis* and represented by a short and narrow median line in *amœnus*. Length of tail $4\frac{3}{16}$ inches (121 mm.), of hind-foot $7\frac{3}{16}$ inches (197 mm.), of ear $3\frac{3}{8}$ inches (85 mm.); basal length of skull $7\frac{5}{16}$ inches (184 mm.), maximum width $2\frac{5}{16}$ inches (74 mm.); length of upper row of cheek-teeth barely $1\frac{7}{8}$ inches (46 mm.).

6. 11. 8. 139. Skull, with horns, and skin. Coguno,

Inhambane District, Portuguese East Africa; collected by Mr. C. H. B. Grant. *Presented by C. D. Rudd, Esq.*, 1906.

6. 11. 8. 140–141. Two skulls, with horns, and skins, female. Same locality and collector. *Same history.*

8. 1. 1. 121–122. Two skulls, with horns, and skins. Gorongoga, P. E. A.; same collector. *Same donor*, 1908.

D.—Cephalophus natalensis bradshawi.

Cephalophus natalensis bradshawi, *Wroughton, Ann. Mag. Nat. Hist.* ser. 8, vol. viii, p. 279, 1911; *Lydekker, Game Animals of Africa, Suppl.* p. 9, 1911.

Typical locality Shiri Valley, Nyasaland.

Differs from *robertsi* by the much lighter and more yellow tint of the pale tawny ochery of the general colour; and by that part of the throat not occupied by the white throat-patch, the chest, the inner sides of the fore-legs, and the under-parts being nearly white, with only a slight rufous tinge; nape-patch slightly and nasal patch markedly more pronounced than in *robertsi*. Basal length of skull barely $5\frac{1}{2}$ inches (144 mm.); maximum breadth $2\frac{3}{4}$ inches (70 mm.); length of row of upper cheek-teeth $1\frac{11}{16}$ inches (45 mm.).

11. 6. 16. 1. Skull, with horns, and skin, female, Chiromo, Shiri Valley, Nyasaland. Type.
Presented by Major C. P. Bradshaw, 1911.

V. CEPHALOPHUS CENTRALIS.

Cephalophus centralis, *M. Rothschild and Neuville, C. R. Ac. Sci. Paris*, vol. cxliv, p. 217, 1907; *Lydekker, Game Animals of Africa*, p. 150, 1908.

Typical locality Ituri Forest.

Distinguished from the typical form of *C. natalensis* by the more exclusively sombre colour of the face, the wholly red head-crest, which shows no black hairs, the brighter tint of the forehead, and the rather larger bodily size.

As this duiker is not included by Wroughton among the races of *C. natalensis*, it is provisionally allowed specific rank, although it is probably nothing more than a local form of the latter.

No specimen in collection.

VI. CEPHALOPHUS NIGRIFRONS.

Cephalophus nigrifrons, *Gray*, *Proc. Zool. Soc.* 1871, p. 578, pl. xlvi, *Cat. Ruminants Brit. Mus.* p. 27, 1872, *Hand-List Ruminants Brit. Mus.* p. 96, 1873; *Peters*, *Monatsber Ak. Berlin*, 1876, p. 482; *Thomas*, *Proc. Zool. Soc.* 1892, p. 419; *Lydekker*, *Horns and Hoofs*, p. 210, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 150, 1908; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 149, pl. xviii, fig. 1, 1895; *Pousargues*, *Ann. Sci. Nat.*, *Zool.* ser. 7, vol. iv, p. 38, 1897; *de Winton*, *Proc. Zool. Soc.* 1899, p. 773; *Thomas and Wroughton*, *Ann. Mag. Nat. Hist.* ser. 7, vol. xix, p. 387, 1907; *Pocock*, *Proc. Zool. Soc.* 1910, p. 872.

Cephalophus aureus, *Gray*, *Ann. Mag. Nat. Hist.* ser. 4, vol. xii, p. 42, 1873, *Hand-List Ruminants Brit. Mus.* p. 95, 1873.

Typical locality Gabun.

A medium-sized species, standing about 18 or 19 inches at shoulder, distinguished from *C. natalensis* by a blackish blaze on the face—widest on the forehead—and the dark shanks and feet. It is further distinguished by the greater uniformity of colouring, which is scarcely paler below than above, and by the absence of pale bay on cheeks, sides of neck, and throat, as well as of a white chin.

General colour deep chestnut, scarcely paler below than above, but head-crest and middle line of face blackish, and contrasting strongly with rufous eyebrow-streak; nape rather browner; limbs from knees and hocks downwards, and tail, except for some white hairs in terminal tuft, blackish. Horns short, somewhat expanded at base; skull with convex frontal region; hoofs relatively long. Basal length of skull $6\frac{1}{4}$, maximum breadth $3\frac{1}{8}$ inches.

The range extends along the west coast from the Gabun to the Cameruns, and to Stanley Falls on the Upper Congo.

71. 5. 27. 2. Skull, with horns, and skin. Gabun; collected by Monsieur P. du Chaillu. Type.

Purchased, 1871.

61. 7. 29. 28. Skull, with horns, and skin, immature. Same locality and collector. Type of *C. aureus*.

Purchased, 1861.

1. 5. 4. 5. Skull, with horns, and skin. Stanley Falls, Upper Congo; collected by Capt. Weyns.

Presented by the Congo Free State Museum, 1901.

VII. CEPHALOPHUS CLAUDI.

Cephalophus claudi, *Thomas and Wroughton, Ann. Mag. Nat. Hist.* ser. 7, vol. xix, p. 386, 1907; *Alexander, From Niger to Nile*, vol. ii, p. 391, 1907; *Lydekker, Game Animals of Africa*, p. 151, 1908.

Typical locality Wellé Valley, Congo State.

Distinguished from *nigrifrons* by the much darker and richer colouring, the general colour being burnt-sienna above, with a strong suffusion of black on the shoulders, and only a little paler below than above, but with a dark median ventral line, body-colour extending below hocks in hind-legs. Skull relatively longer in advance of orbits, narrower between them, and flatter on forehead than in *nigrifrons;* cheek-teeth broader; auditory bullæ larger. The following dimensions, in millimetres, show the differences in skull-proportion of this species as compared with both *nigrifrons* and *rubidus*:—

	claudi.	*nigrifrons.*	*rubidus.*
Length of preorbital portion	102	92	85
Length of nasals	75	70	60
Interorbital width	38	40	40
Maximum breadth of second molar	12·5	10	10

7. 7. 8. 222. Skull, with horns, and skin. Bambili, Wellé Valley, Congo State; collected during Alexander-Gosling Expedition from the Niger to the Nile. Type.

Presented by the Alexander-Gosling Expedition, 1907.

VIII. CEPHALOPHUS RUBIDUS.

Cephalophus rubidus, *Thomas, Proc. Zool. Soc.* 1901, vol. ii, p. 89; *Thomas and Wroughton, Ann. Mag. Nat. Hist.* ser. 7, vol. xix, p. 386, 1907; *Lydekker, Game Animals of Africa*, p. 151, 1908.

Typical locality Ruwenzori, E. Africa.

Closely allied to *nigrifrons* and *claudi*, from both of which it differs by the presence of a white chin-patch, while from the latter it is also distinguished by the absence of a dark area on the shoulders and of a dark ventral stripe, as well as by the dark portion of the hind-legs including the hocks. The skull-characters mentioned under the heading of *claudi*, together with the table of measurements, serve to distinguish this species still more markedly from *nigrifrons*.

General colour of thick, close, and rather woolly hair uniformly rich chestnut, with the basal portion of the hairs greyer, and along the middle line of the back, especially near the loins, showing through, and thus communicating a darker shade to that line; hair of neck directed (as usual) backwards; a white chin-patch; under-parts paler rufous, becoming whitish between legs; from shoulders and hips colour gradually darkening to the knees and hocks, which, like the shanks, are blackish; tail short, black grizzled with rufous and white above, and dirty white beneath and at tip.

6. 7. 1. 199. Skull, with horns, and skin. Ruwenzori.
Presented by the Ruwenzori Expedition, 1906.

4. 4. 12. 1. Skull, with horns, and skin. Impuka Valley, Ruwenzori (10,000 feet).
Presented by Capt. C. Ashburnham, 1904.

1. 0. 9. 65. Skin. Ruwenzori. Type.
Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1901.

IX. CEPHALOPHUS WEYNSI.

Cephalophus weynsi, *Thomas, Ann. Congo Mus.—Zool.* vol. ii, pt. 1, p. 15, pl. i, 1901, *Proc. Zool. Soc.* 1903, vol. i, p. 226; *Alexander, From Niger to Nile*, vol. ii, p. 391, 1907; *Lydekker, Game Animals of Africa*, p. 152, 1908; *Christy, Proc. Zool. Soc.* 1911, p. 672.

Typical locality near Stanley Falls, Congo State.

Nearly allied to *nigrifrons*, but with hair of nape directed forwards; body-hair short and close; general colour brown in front and bright rufous behind, the tint of the rump corresponding with that in *nigrifrons;* muzzle chocolate-brown, passing gradually into mingled red and black on the forehead, and into red-maroon in the neighbourhood of crest; cheeks pale brown above and whitish lower down; ears short and rounded, brown with whitish margins; no dark dorsal or ventral stripe.

The range extends to the Albert Nyanza, about 150 miles to the east of which this species is replaced by *C. ignifer.*

1. 5. 4. 7. Skull, with horns, and skin, immature female. Stanley Falls, Upper Congo. Co-type; collected by Capt. Weyns. *Presented by the Congo Free State Museum*, 1901.

7. 7. 8. 219. Skull, with horns, and skin, female. Bambili, Wellé Valley, Congo State.

Presented by the Alexander-Gosling Expedition, 1907.

11. 11. 7. 2. Skin, mounted. Mabira Forest, Uganda. Also skull. *Presented by Dr. C. Christy*, 1911.

11. 11 7. 1. Skull, with horns, and skin, immature. Same locality. *Same history.*

7. 10. 1. 10. Skull, with horns, and skin, immature. Budongo Forest, Uganda.

Presented by L. M. Seth-Smith, Esq., 1907.

7. 10. 1. 11. Immature skin. Budongo. *Same history.*

5. 11. 27. 18. Skull, with horns. French Congo; collected by G. L. Baxter, Esq. *Purchased*, 1905.

X. CEPHALOPHUS JOHNSTONI.

Cephalophus johnstoni, *Thomas*, *Proc. Zool. Soc.* 1901, vol. ii, p. 89, *ibid.* 1903, vol. i, p. 226; *Lydekker*, *Game Animals of Africa*, p. 152, 1908.

Typical locality Toro district, eastward of Ruwenzori, Uganda.

Closely allied to *weynsi*, with which it agrees in the reversal of the hair-slope on the nape, but distinguished by its thicker and more woolly coat and much darker colour.

1. 8. 9. 64. Skull, with horns, and skin. Toro. Type.

Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1901.

XI. CEPHALOPHUS IGNIFER.

Cephalophus ignifer, *Thomas*, *Proc. Zool. Soc.* 1903, vol. i, p. 226; *Lydekker*, *Game Animals of Africa*, p. 152, 1908.

Typical locality Eldoma Ravine, B. E. Africa.

Near akin in colour and general characters to *weynsi* and *johnstoni*, but distinguished from both by the backward slope of the nuchal hairs. Size medium; coat fine and glossy, with the general colour bright rufous or bay, darkening to dull brownish on neck and shoulders; forehead mixed rufous and black; crown and back of head rufous like back, but the tuft tending more to mahogany. Muzzle blackish; lips and chin white; ears dark brown, white on margins and internally; throat rufous; middle line of under-parts brown,

shading into rufous on flanks, and passing into white between legs; from shoulders and thighs gradually darkens to knees and hocks, which are brown, and so on to lower part of legs, which are nearly black above hoofs; tail rufous above and white below, with a brown and white tuft.

Skull of normal character, with premaxillæ just reaching nasals, and moderately convex; basal length $6\frac{7}{16}$ (162 mm.), maximum width $3\frac{3}{8}$ inches (79·5 mm.). Length of hind-foot, with hoof, $9\frac{1}{2}$ inches (240 mm.), of ear $3\frac{1}{4}$ inches (81 mm.).

2. 11. 17. 6. Skull, with horns, and skin. Eldoma Ravine, B. E. A. Type. *Presented by F. W. Isaac, Esq.*, 1902.

3. 3. 7. 2–3. Two skulls, with horns, and skins, female. Same locality. *Same donor*, 1903.

6. 5. 6. 8. Skin, mounted. Kakamega Forest, B. E. Africa. *Same donor*, 1906.

XII. CEPHALOPHUS HARVEYI.

Cephalophus harveyi, *Thomas*, *Ann. Mag. Nat. Hist.* ser. 6, vol. xi, p. 48, 1893, *Ann. Mus. Genova*, ser. 2, vol. xv, p. 6, 1895, *Proc. Zool. Soc.* 1903, vol. i, p. 226; *Lydekker*, *Horns and Hoofs*, p. 210, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 153, 1908; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 145, pl. xvii, 1895; *Matschie*, *Säugethiere Deutsch-Ostafrika*, p. 116, 1895; *de Winton*, *Proc. Zool. Soc.* 1899, p. 773; *Ward*, *Records of Big Game*, ed. 6, p. 168, 1910.

Typical locality Kilimanjaro district, B. E. Africa.

Closely related to *ignifer*, but with the greater part of the forehead black, and (typically) middle of head-crest black and sides chestnut. Horns very thick at base, so that in old individuals their length is barely two and a half times the basal diameter. Feet slender, with hoofs of average length. Skull roughened and inflated in frontal region, with median palatal notch slightly deeper than lateral over; basal length $5\frac{7}{8}$ inches, maximum breadth 3 inches.

The range extends from the Kilimanjaro district northwards to the south of Somaliland. Two races said to be distinguished by the colour of the crest have been named:—

Crest black in middle and chestnut on sides *C. harveyi harveyi.*
Crest mahogany-coloured in the middle and rufous at sides..... *C. h. keniæ.*

A.—Cephalophus harveyi harveyi.

General characters those of the species.

Typical locality Kilimanjaro district.

92. 12. 3. 10. Head, mounted, body-skin, and skull. Kaha Forest, westward of Taveta, Kilimanjaro district. Type. *Presented by Sir F. J. Jackson, K.C.M.G., C.B.*, 1892.

9. 11. 15. 1. Skull, with horns, and skin. Kikuyu Forest, B. E. A. *Presented by M. P. Seth-Smith, Esq.*, 1909.

9. 11. 15. 2. Skull, with horns, and skin, female. Same locality. *Same history.*

79. 11. 12. 1. Skull, with horns, and skin. Malindi, B. E. Africa. *Presented by Sir John Kirk*, 1879.

9. 4. 18. 1. Skull, with horns, and skin. Bulla-bulla, Juba Valley, southward of Italian Somaliland. *Presented by H. P. Hennessey, Esq.*, 1909.

99. 12. 25. 1. Skull, with horns, and skin, female. Tana Valley, B. E. A. *Presented by H. de Prée, Esq.*, 1899.

7. 1. 12. 2. Skull, with horns, and skin. Kikuyu Forest. *Presented by C. W. Haywood, Esq.*, 1907.

10. 4. 20. 8. Skull, with horns. Subaki, Tana Valley. *Presented by J. Muir, Esq.*, 1910.

7. 16. 24. 1. Skull, with horns, and skin. Lake Nyasa. *Presented by A. J. Stout, Esq.*, 1907.

B.—Cephalophus harveyi keniæ.

Cephalophus harveyi keniæ, *Lönnberg, Ann. Mag. Nat. Hist.* ser. 8, vol. ix, p. 65, 1912, *K. Svenska Vet.-Ak. Handl.* vol. xlviii, no. 5, p. 150, 1912.

Typical locality forests near Nairobi, B. E. Africa.

Said to be distinguished from typical race by head-tuft being mahogany-colour in the middle and rufous at the sides, instead of black in middle and chestnut on sides. Fore-legs and hind-legs from the hocks downwards glossy brownish black; a brown streak down middle of chest.

11. 7. 8. 15. Skull, with horns, and skin immature; provisionally referred to this race. Nairobi, B. E. A. Collected by S. A. Neave, Esq. *Purchased*, 1911.

The dimensions of the type skull, as given by the describer, are as follows:—

Basal length	151 mm.
Maximum width	77 ,,
Distance from muzzle to orbit	88 ,,
Length of nasals	58 ,,
,, ,, upper series of cheek-teeth	49 ,,

XIII. CEPHALOPHUS LEOPOLDI.

Cephalophus leopoldi, *M. Rothschild and Neuville, C. R. Ac. Sci. Paris*, vol. cxliii, p. 1257, 1906; *Lydekker, Game Animals of Africa*, p. 154, 1908.

Typical locality Ituri Forest.

Type apparently in the collection of Baron Maurice de Rothschild.

Described as near akin to *nigrifrons* and *harveyi*, but with stouter horns: general colour recalling that of *natalensis*, being tawny rufous, but rather darker on the back and duller on the neck and shoulder than in that species; crest long and entirely chestnut, thereby differing from *harveyi* and *nigrifrons*, as well as *natalensis*, but darker and redder than general body-colour. Muzzle and nose black, and flecks of black on forehead (in which respect this duiker comes nearer to *natalensis* than to the other two species); ears white interiorly, with black tips; throat whitish; cheeks grey fawn, like upper part of chest; lower part of latter and under-parts generally blackish fawn, unlike *harveyi* and *natalensis*; groin whitish; lower segments of the limbs, especially in hind-pair, blackish (in this respect resembling *nigrifrons* and differing from *natalensis* and *harveyi*); tail rufous on basal portion of upper surface, with a dark line above and long white hairs beneath.

No specimen in collection.

XIV. CEPHALOPHUS LEUCOGASTER.

Cephalophus leucogaster, *Gray*, *Ann. Mag. Nat. Hist.* ser. 4, vol. xii, p. 43, 1873; *Thomas*, *Proc. Zool. Soc.* 1892, p, 420; *Lydekker*, *Horns and Hoofs*, p. 201, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 154, 1908; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 153, 1895; *Alexander*, *From Niger to Nile*, vol. ii, p. 391, 1907.

Typical locality Gabun.

Size medium; height at shoulder about 16 inches. General colour dull chestnut-rufous, with a broad blackish dorsal stripe; face rufous darkening into brown in middle line; crest mixed rufous and black; nape browner; hind aspect of buttocks and under-parts whitish; fore-legs and hind-legs posteriorly slaty grey. The dorsal stripe is mixed with rufous on withers, and becomes narrow and sharply defined near tail, which terminates in a large black tuft mingled with white. The presence of a white streak along front of the hind-shanks, described as a specific character, is not constant. The range extends from the Gabun to the Cameruns and Congo.

61. 7. 29. 20. Skin, mounted, and skull, immature. Gabun; collected by Monsieur P. du Chaillu. Type.
Purchased, 1861.

3. 2. 4. 26. Skull, with horns, and skin, female. Efulen, Cameruns; collected by G. L. Bates, Esq. *Purchased*, 1903.

3. 2. 4. 29. Skull, with horns. Same locality and collector. *Same history.*

3. 2. 4. 30. Immature skull, with horns. Same locality and collector. *Same history.*

3. 2. 4. 31. A similar specimen. Same locality and collector. *Same history.*

1. 5. 4. 6. Skull, with horns, and skin. Stanley Falls, Congo; collected by Capt. Weyns.
Presented by the Congo Free State Museum, 1901.

7. 7. 8. 223. Immature skull, with horns, and skin. Bambili, Wellé Valley.
Presented by the Alexander-Gosling Expedition, 1907.

XV. CEPHALOPHUS DORSALIS.

Cephalophus dorsalis, *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 165, 1846, *List Osteol. Brit. Mus.* p. 146, 1847, *Knowsley Menagerie*, p. 10, pl. vii, 1850, *Proc. Zool. Soc.* 1850, p. 123, 1871, p. 597, pl. xlv, *Cat. Ungulata Brit. Mus.* p. 84, 1852, *Cat. Ruminants Brit. Mus.* p. 27, 1872, *Hand-List Ruminants Brit. Mus.* p. 96, 1873; *Temminck*, *Esquiss. Zool. Guiné*, pp. 194 and 218, 1853; *Sclater*, *Proc. Zool. Soc.* 1869, p. 594, pl. xlvi; *Murie*, *ibid.* p. 595; *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 166, 1869; *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 132, 1887, *Notes Leyden Mus.* vol. x, p. 20, 1888, *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 162, 1892; *Büttikofer*, *Reisebilder Liberia*, vol. ii, p. 377, 1890; *Thomas*, *Proc. Zool. Soc.* 1892, p. 420; *Matschie*, *Mitth. deutsch. Schutzgebiet*, vol. vi, p. 81, 1893; *Lydekker*, *Horns and Hoofs*, p. 211, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 155, 1908; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 155, pl. xix, fig. 1, 1895; *Pocock*, *Proc. Zool. Soc.* 1910, p. 871; *Ward*, *Records of Big Game*, ed. 6, p. 166, 1910.

Antilope (Cephalophus) dorsalis, *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. v, p. 425, 1855.

Cephalophus badius, *Gray*. *Cat. Ungulata*, *Brit. Mus.* p. 84, 1852, *Proc. Zool. Soc.* 1871, p. 595, *Cat. Ruminants Brit. Mus.* p. 26, 1872, *Hand-List Ruminants Brit. Mus.* p. 94, 1873.

Cephalophus breviceps, *Gray*, *Proc. Zool. Soc.* 1866, p. 202, pl. xx.

Cephalops dorsalis, *Knottnerus-Meyer*, *Arch. Naturgesch.* vol. lxxiii, pt. 1, p. 99, 1907.

Typical locality Sierra Leone.

Type of *Cephalops*.

Size medium; height at withers probably about 16 inches. Ears very short and broad; general colour bright chestnut-rufous, with a dark dorsal stripe, commencing at the nose as a face-blaze, and interrupted only at the crest, which may be rufous; middle line of face rufous; eyebrow-streak bright rufous; crest black, black and rufous, or rufous; dorsal stripe, which is black on back, sometimes ill-defined and sometimes expanding into a patch on withers, continued down shoulders towards fore-legs; under-parts, except for a black patch on chest, and hams rufous, like body; fore-legs brown from shoulder downwards, hind-legs from above hocks; tail black above, white below at and near tip. Skull with very short conical muzzle, deep lachrymal pits, and median palatal notch about one-fifth inch in advance of lateral pair. Length of skull $5\frac{1}{2}$ inches, greatest breadth $3\frac{1}{8}$, length from orbit to muzzle 3 inches.

The species has a considerable range on the west coast.

44. 11. 8. 13. Immature skin. Menagerie specimen, Sierra Leone. Type. *Purchased*, 1844.

46. 11. 2. 9. Immature skin. Gambia; collected by Mr. J. Whitfield. *Presented by the Earl of Derby*, 1846.

46. 11. 20. 1. Skull, with horns; associated with the preceding specimen. *Same history.*

63. 11. 29. 1. Skeleton and skin. Zoological Society. *Purchased*, 1863.

69. 3. 5. 2. Skull, with horns, and skin, female. Zoological Society. Type of *C. breviceps.* *Purchased*, 1869.

92. 4. 23. 2. Skull, with horns, and skin. Fanti. *Purchased*, 1892.

11. 6. 2. 13. Skin, female. Bibianaha, Gold Coast. *Presented by Dr. H. G. F. Spurrell*, 1911.

11. 6. 2. 14. Skin. Same locality. *Same history.*

12. 2. 19. 1. Skull, with horns, and skin. Obuassi, southern Ashanti; collected by Capt. C. H. Armitage. *Presented by the Zoological Society*, 1912.

78. 7. 16. 2. Skull, with horns, and skin, immature. Fanti. *Purchased*, 1888.

97. 1. 5. 12. Skull, with horns, and skin. Fanti. Collection of Sir V. Brooke, Bart. *Presented by Sir Douglas Brooke, Bart.*, 1897.

* * * * Skull, with horns, and skin. *Presented by the Zoological Society.*

69. 3. 5. 11. Spirit specimen; hybrid between *dorsalis* and *rufilatus.* Zoological Society. *Purchased*, 1869.

62. 12. 2. 91. Skeleton. *Purchased*, 1862.

XVI. CEPHALOPHUS CASTANEUS.

Cephalophus dorsalis castaneus, *Thomas, Proc. Zool. Soc.* 1892, p. 421; *Sclater and Thomas, Book of Antelopes*, vol. i, p. 155, 1895.

Cephalophus castaneus, *Thomas, Ann. Congo Mus., Zool.* vol. ii, pt. 1, p. 15, 1901; *Alexander, From Niger to Nile*, vol. ii, p. 391, 1907; *Lydekker, Game Animals of Africa*, p. 156, 1908.

Typical locality Cameruns.

Rather larger than *dorsalis*, with, apparently, slightly bigger ears. General colour deep chestnut, with a black

dorsal stripe, and brown shanks; head darker and duller and chestnut eyebrow-stripe less distinct than in *dorsalis*. Skull with normal slender, elongate muzzle, with the interval between front border of orbit greater than zygomatic width; thus differing from the short conical muzzle of *dorsalis*. Cheek-teeth larger than in that species. Basal length of type skull 6 inches, maximum width $3\frac{3}{8}$, interval between orbit and muzzle $3\frac{1}{2}$ inches.

The range includes Southern Nigeria and French Congo.

71. 7. 8. 7. Skin, mounted, and skull. Cameruns. Type. *Purchased*, 1871.

5. 11. 27. 17. Skull, with horns. Benito Valley, French Congo; collected by G. L. Bates, Esq. *Purchased*, 1905.

7. 7. 8. 224. Skull, with horns, and skin, female. Bambili, Wellé Valley.

Presented by the Alexander-Gosling Expedition, 1907.

3. 2. 4. 33. Immature skull, with horns. Efulen, Cameruns; collected by G. L. Bates, Esq. *Purchased*, 1903.

8. 6. 28. 2. Skin. Oban Hills, Southern Nigeria; collected by P. A. Talbot, Esq. *Purchased*, 1908.

10. 6. 1. 39. Skull, with horns, and skin. Same locality and collector. *Purchased*, 1910.

10. 6. 1. 40. Skull, with horns, and imperfect skin. Inkami, north-east of Oban; same collector. *Same history.*

12. 10. 28. 55. Skull, with horns, and skin. Oban; same collector. *Purchased*, 1912.

XVII. CEPHALOPHUS LEUCOCHILUS.

Cephalophus leucochilus, *Jentink*, *Notes Leyden Mus.* vol. xxiii, p. 21, 1901; *Lydekker*, *Game Animals of Africa*, p. 156, 1908.

Typical locality Loango, Angola.

Stated to be larger, heavier, and darker than *dorsalis*, from which it is also distinguished by the higher part of the upper lips being white, like the chin, and by the presence of a white spot above each eye, terminating in a white line directed towards upper part of nose. Very probably not more than a race of *dorsalis*.

No example in collection.

(?) CEPHALOPHUS EMINI.

Cephalophus emini, *Noack*, *Zool. Anz.* vol. xxvii, p. 405, 1905; *Lydekker*, *Game Animals of Africa*, p. 166, 1908.

Described on the evidence of a headless skin from East Central Africa, probably west of the Victoria Nyanza, said to indicate a duiker of the *leucogaster-dorsalis* group, characterised by the length of the rufous brown hair of the back, and the presence of a yellow ring on each hair of the underparts, which communicates a speckled appearance to the coat of this surface. Even supposing the generic determination to be correct, the right of this form to a specific position is uncertain.

XVIII. CEPHALOPHUS OGILBYI.

Antilope ogilbyi, *Waterhouse*, *Proc. Zool. Soc.* 1838, p. 60, 1842, p. 129, *Ann. Mag. Nat. Hist.* ser. 1, vol. ii, p. 472, 1839, vol. xii, p. 57, 1849; *Fraser*, *Zool. Typ.* pl. xix, 1849.

Cephalophorus ogilbyi, *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. x, p. 262, 1842, *List. Mamm. Brit. Mus.* p. 163, 1843.

Antilope (Tragelaphus) ogilbyi, *Lesson*, *Nouv. Tabl. Règn. Anim.*, *Mamm.* p. 181, 1842.

Antilope (Cephalophus) ogilbyi, *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. iv, p. 466, 1844, vol. v, p. 423, 1855.

Cephalophus ogilbyi, *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 165, 1846, *Knowsley Menagerie*, p. 10, pl. viii, fig. 2, 1850, *Proc. Zool. Soc.* 1850, p. 122, 1871, p. 529, *Cat. Ungulata Brit. Mus.* p. 83, 1852, *Cat. Ruminants Brit. Mus.* p. 26, 1872, *Hand-List Ruminants Brit. Mus.* p. 98, 1873; *Temminck*, *Esquiss. Zool. Guiné*, pp. 194 and 217, 1853; *Gerrard*, *Cat. Bones Mamm. Brit. Mus.* p. 236, 1862; *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 167, 1869; *Jentink*, *Notes Leyden Mus.* vol. x, p. 20, 1888, *Cat. Mamm. Leyden Mus.* (*Mus. Pays-Bas*, vol. xi) p. 162, 1892; *Büttikofer*, *Reisebilder Liberia*, vol. ii, p. 377, 1890; *Matschie*, *Arch. Nat.* 1891, pt. 1, p. 353, *Mitth. deutsch. Schutzgebiet*, vol. vi, p. 81, 1893; *Thomas*, *Proc. Zool. Soc.* 1892, p. 422; *Lydekker*, *Horns and Hoofs*, p. 211, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 156, 1908; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 161, 1895 (*non* pl. xviii, fig. 2); *Pousargues*, *Ann. Sci. Nat.*, *Zool.* ser. 7, vol. iv, p. 40, 1897.

Sylvicapra ogilbyi, *Sundevall*, *K. Svenska Vet.-Ak. Handl.* 1844, p. 191.

Cephalophia ogilbyi, *Knottnerus-Meyer*, *Arch. Naturgesch.* vol. lxxiii, pt. 1, p. 99, 1907.

Typical locality Fernando Po.

Type of *Cephalophia*.

Size medium; shoulder-height about 22 inches. General colour bright orange, tending to rufous on hind-quarters; face, except brown nose, coloured like body, but nape and sides of neck brown or blackish, with the hair very thin; a black dorsal stripe commences indistinctly at withers, becomes narrower and more defined on flanks, and is continued on to tail; front of shanks black but limbs elsewhere dull yellowish down to pasterns, where they are brown or blackish, skull with strong frontal convexity, and shallow pits for face-glands; three subequal notches on hind border of palate. Basal length of skull $7\frac{1}{4}$, maximum width $3\frac{1}{2}$, interval between muzzle and orbit $4\frac{3}{8}$ inches. Length of ear 3, of hind-foot $9\frac{3}{8}$ inches.

55. 12. 24. 403. Skin. Fernando Po. Type.
Presented by G. Knapp, Esq., 1855.

52. 2. 22. 10. Skull, with horns. Fernando Po; collected by L. Fraser, Esq. Figured "Hand-List Ruminants" (1873).
Purchased, 1852.

4. 7. 1. 126. Skull, with horns, and skin. Bantabiri, Fernando Po; collected by Mr. E. Seimund.
Presented by Fernando Po Commission, 1904.

4. 7. 1. 127. Skull, with horns, and skin, female. Same locality and collector. *Same history.*

3. 1. 6. 4. Skull, with horns, and skin, female. Moka, Fernando Po. *Presented by Boyd Alexander, Esq.*, 1903.

64. 12. 21. 1. Skull, with horns, immature. Fernando Po. *Purchased*, 1864.

64. 12. 27. 2. Skull, with horns. Fernando Po.
Same history.

42. 11. 4. 31. Skin. Fernando Po.
Presented by Lieut. T. Thomson, R.N., 1842.

XIX. CEPHALOPHUS BROOKEI.

Cephalophus brookei, *Thomas, Ann. Mag. Nat. Hist.* ser. 7, vol. xi, p. 290, 1893; *Lydekker, Game Animals of Africa*, p. 157, 1908.
Cephalophus ogilbyi, *Sclater and Thomas, Book of Antelopes*, vol. i, pl. xviii, fig. 2, 1895.

Typical locality Fanti.

The mainland representative of *ogilbyi*, from which it

differs by the reversal of the direction of the hairs of the nape (these being directed forwards for a distance of 3 or 4 inches in the same manner as in *weynsi* and *johnstoni*), the broader dorsal stripe, ending 3 or 4 inches short of tail-tip, the light colour of the limbs to the hoofs, and the less inflated frontal region of the skull. The tail-tuft is black and white.

The range includes Fanti, the Gold Coast, the Cameruns, and Southern Nigeria.

97. 1. 5. 2. Skull, with horns, and skin. Fanti. Type. Formerly in collection of Sir Victor Brooke, Bart.
Presented by Sir Douglas Brooke, Bart., 1897.

97. 1. 5. 3. Skull, with horns, and skin, female. Same locality and collection. *Same history.*

97. 1. 5. 4. Skull, with horns, and skin, immature. Same locality and collection. *Same history.*

97. 1. 5. 122. Skin, immature. Usshur, Gold Coast. Sir Victor Brooke's collection. *Same history.*

3. 4. 23. 1. Skull, with horns. Cape Dikundscha, Cameruns. *Presented by Dr. Einar Lönnberg*, 1903.

3. 4. 11. 1–2. Two skins. Same locality. *Same history.*

8. 6. 28. 1. Skin. Oban Hills, Southern Nigeria.
Presented by P. A. Talbot, Esq., 1908.

10. 6. 1. 41. Skull, with horns, and skin. Niaji, north-east of Oban; collected by P. A. Talbot, Esq.
Purchased, 1910.

12. 10. 28. 56. Skull, with horns, and skin, female. Oban district; same collector. *Purchased*, 1912.

XX. CEPHALOPHUS CALLIPYGUS.

Cephalophus callipygus, *Peters*, *Monatsber. Ak. Berlin*, 1876, p. 483, pls. lii and iv; *Thomas*, *Proc. Zool. Soc.* 1892, p. 422; *Lydekker*, *Horns and Hoofs*, p. 211, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 157, 1908; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 165, 1895.

Cephalophelia callipyga, *Knottnerus-Meyer*, *Arch. Naturgesch.* vol. lxxiii, pt. 1, p. 99, 1907.

Type of *Cephalophelia*.

Typical locality Gabun.

Height approximately as in *dorsalis*. Hairs of nape

directed forwards; general colour yellowish brown, becoming more distinctly rufous on loins; forehead and crest rich rufous; chin and throat white, rest of under-parts yellowish; a broad black dorsal stripe, commencing at withers, widening at loins, and including whole hind surface of hips and back of hind-legs to hocks, as well as tail, except under side of tip, where hairs have white points; sides of thighs adjacent to black area rich rufous.

Basal length of skull about 6½ inches.

The range includes the Cameruns, as well as the Gabun.

3. 2. 4. 27. Skull, with horns, and skin, female. Efulen, Cameruns; collected by G. L. Bates, Esq. *Purchased*, 1903.

3. 2. 4. 32. Skull, with horns, female. Same locality and collector. *Same history.*

XXI. CEPHALOPHUS RUFILATUS.

Antilope grimmia, *Desmarest*, *Nouv. Dict. Hist. Nat.* ed. 2, vol. ii, p. 191, 1816, *Mamm.* p. 464, 1822; *Lesson*, *Man. Mamm.* p. 379, 1827, *Hist. Nat. Mamm.* vol. x, p. 294, 1836, *Nouv. Tabl. Règn. Anim.*, *Mamm.* p. 178, 1842; *H. Smith*, *Griffith's Animal Kingdom*, vol. iv, p. 266, vol. v, p. 347, 1827; *J. Fischer*, *Synop. Mamm.* p. 468, 1829; *Gervais*, *Dict. Sci. Nat.*, *Suppl.* vol. i, p. 262, 1840; *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. iv, p. 451, 1844; *Schinz*, *Synop. Mamm.* vol. ii, p. 418, 1815; *Giebel*, *Säugethiere*, p. 321, 1853–55; nec *Pallas*.

Cephalophus grimmia, *A. Smith*, *S. African Quart. Journ.* vol. ii, p. 216, 1834.

Antilope (Grimmia) grimmia, *Laurillard*, *Dict. Univ. Hist. Nat.* vol. i, p. 623, 1841.

Sylvicapra grimmia, *Sundevall*, *K. Svenska Vet.-Ak. Handl.* 1844, p. 190, 1846.

Cephalophus rufilatus, *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 166, 1846, *List Osteol. Brit. Mus.* p. 56, 1847, *Knowsley Menagerie*, p. 10, pls. vi and ix, 1850, *Proc. Zool. Soc.* 1850, p. 123, 1871, p. 597, *Cat. Ungulata Brit. Mus.* p. 85, 1852, *Cat. Ruminants Brit. Mus.* p. 26, 1872, *Hand-List Ruminants Brit. Mus.* p. 95, 1873; *Turner*, *Proc. Zool. Soc.* 1850, p. 170; *Temminck*, *Esquiss. Zool. Guiné*, pp. 194 and 221, 1853; *Gerrard*, *Cat. Bones Mamm. Brit. Mus.* p. 236, 1862; *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 166, 1869; *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 132, 1387, *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 162, 1892; *Matschie*, *Mitth. deutsch. Schutzgebiet*, vol. vi, p. 81, 1893; *Thomas*, *Proc. Zool. Soc.* 1892, p. 423; *Lydekker*, *Horns and Hoofs*, p. 211, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 158, 1908; *Sclater and Thomas*, *Book of Antelopes*,

vol. i, p. 167, pl. xix, fig. 1, 1895; *de Winton, Proc. Zool. Soc.* 1899, p. 771.

Antilope (Cephalolophus) rufilatus, *Wagner, Schreber's Säugthiere, Suppl.* vol. v, p. 425, 1855.

Cephalophus rufilatus cuvieri, *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 166, 1869.

Type of *Grimmia*.

Typical locality Gambia.

The smallest of the red duikers (agreeing approximately with the blue *C. natalensis*), representing a dwarf type of the *dorsalis* group with the black areas replaced by grey, and the rufous, or chestnut, typically of a lighter tint than usual. Height at withers about 14 inches; horns very small; direction of hairs on nape normal. General colour bright yellowish rufous or ochery buff on sides of face, neck, shoulders, flanks, rump, and under-parts, bluish grey on middle line of nose, forehead, back of head and ears, middle line of back from withers to rump, and lower part of limbs; crest long, blackish; tail rufous above at base, black at tip.

Skull with long and slender muzzle and deep lachrymal pits; central palatine notch about $\frac{1}{4}$ inch in advance of lateral ones; basal length $5\frac{1}{4}$, maximum width $2\frac{5}{8}$, interval from orbit to muzzle $2\frac{7}{8}$ inches. Length of ear $2\frac{1}{4}$, of hind-foot 7 inches.

The slate-coloured legs and dorsal stripe, together with the thicker horns, serve to distinguish this species from the much larger *C. harveyi* and *C. nigrifrons*.

This range extends along the west coast of Africa, from Gambia to the Niger.

The two local races are distinguished as follows:—

a. General colour yellowish rufous or ochery buff; nape, dorsal patch, and feet smoky grey *C. r. rufilatus.*

b. General colour burnt-sienna; nape, dorsal patch, and feet slaty grey..... *C. r. rubidior.*

A.—Cephalophus rufilatus rufilatus.

Typical locality Gambia.

General characters those of the species.

46. 11. 2. 8. Skin. Gambia. Co-type.

Presented by the Earl of Derby, 1846.

46. 11. 20. 2. Skull, associated with the above.
Same history.

99. 6. 15. 19. Skin, mounted, and skull. Gambaga, Gold Coast. *Presented by Capt. W. Giffard*, 1899.

8. 12. 18. 2. Skin, mounted, and skull. Senegambia.
Presented by F. R. Roberts, Esq., 1908.

5. 12. 10. 1. Skull, with horns. Lagos.
Presented by W. A. Ross, Esq., 1905.

5. 12. 10. 2–3. Two skulls, with horns, female. Same locality. *Same history.*

93. 3. 5. 2. Skull, with horns, immature. Gambia.
Presented by G. Carter, Esq., 1893.

99. 6. 15. 16. Skull, with horns, female. Gambaga.
Presented by Capt. W. Giffard, 1899.

7. 12. 8. 2. Skull, with horns, immature. Sierra Leone.
Presented by Major Pearce, 1907.

65. 4. 27. 11. Immature skull, with horns. From Dr. Baikie's collection. *Presented by Earl Russell*, 1865.

65. 5. 9. 6–7. Two skulls, with horns. Gambia (?). Collected by Mr. Dalton. *Purchased*, 1865.

65. 5. 9. 5. Skin and skeleton. Gambia (?); same collector. *Same history.*

8. 6. 26. 10. Skull, with horns, young. Daru, Sierra Leone. *Presented by Capt. L. Murray*, 1908.

54. 12. 6. 1. Skin, W. Africa. *Purchased*, 1854.

54. 12. 27. 1. Skull, with horns, associated with the preceding. *Same history.*

11. 6. 10. 104–105. Two skins. Upper Gambia.
Presented by G. Fenwick Owen, Esq., 1911.

99. 8. 24. 2. Skull, with horns, and skin, female. Jebba, Nigeria. *Presented by Dr. C. Christy*, 1899.

4. 1. 27. 1. Skull, with horns, and skin. Gambia.
Presented by Sir George Barton, 1904.

5. 12. 10. 2. Skull, with horns, young. Lagos.
Presented by W. A. Ross, Esq., 1905.

10. 2. 17. 3. Skin. Gambia.
Presented by Capt. H. S. Toppin, 1910.

B.—Cephalophus rufilatus rubidior.

Cephalophus rufilatus rubidior, *Thomas and Wroughton, Ann. Mag. Nat. Hist.* ser. 7, vol. xix, p. 383, 1907; *Alexander, From Niger to Nile*, vol. ii, p. 391, 1907; *Lydekker, Game Animals of Africa*, p. 158, 1908.

Typical locality Wellé Valley, Congo State.

General colour much redder than in typical race; the rather long and harsh hair being dark reddish brown, approaching burnt-sienna, with a narrow patch on middle line of back much darker and bluish; under-parts a paler shade of same colour. The colour-pattern is the same as in the typical race, but the dark dorsal area is somewhat less defined and the yellowish rufous or ochery buff general colour replaced by burnt-sienna, while the smoky grey of the nape, dorsal patch, and feet of the typical race is slaty grey; in both races the chin and inner sides of thighs are white.

7. 7. 8. 221. Skull, with horns, and skin. Near Angu, Wellé Valley. Type.

Presented by the Alexander-Gosling Expedition, 1907.

7. 7. 8. 220. Skull, with horns, and skin, female. Molegbwe, near Banzyville, Wellé Valley. *Same history.*

XXII. CEPHALOPHUS DORIÆ.

Antilope doria, *Ogilby, Proc. Zool. Soc.* 1836, p. 121; *Waterhouse, Cat. Mamm. Mus. Zool. Soc.* p. 42, 1838; *Wagner, Schreber's Säugthiere, Suppl.* vol. iv, p. 444, 1844; *Fraser, Zool. Typ.* pl. xviii, 1849.

Antilope zebra, *Gray, Ann. Mag. Nat. Hist.* ser. 1, vol. i, p. 27, 1838; *Lesson, Nouv. Tabl. Règn. Anim., Mamm.* p. 176, 1842.

Antilope zebrata, *Gervais, Dict. Sci. Nat. Suppl.* vol. i, p. 267, 1840 (ex *Robert*, 1836 ?), *Hist. Nat. Mamm.* vol. ii, p. 202, 1855.

Cephalophorus zebra, *Gray, List Mamm. Brit. Mus.* p. 163, 1843.

Damalis (?) zebra, *Gray, Knowsley Menagerie*, p. 22, 1850, *Proc. Zool. Soc.* 1850, p. 142, *Cat. Ungulata Brit. Mus.* p. 129, 1852, *Cat. Ruminants Brit. Mus.* p. 45, 1872.

Cephalophus doria, *Jentink, Notes Leyden Mus.* vol. vii, p. 270, pl. ix, 1885, vol. x, p. 21, pls. ii and iii, 1888, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 133, 1887, *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 164, 1892; *Büttikofer, Reisebilder Liberia*, vol. ii, p. 377, pl. xxix, 1890.

Cephalophus doriæ, *Thomas*, *Proc. Zool. Soc.* 1902, p. 424; *Ward*, *Records of Big Game*, p. 77, 1892; *Lydekker*, *Horns and Hoofs*, p. 211, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 159, 1908; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 171, pl. xx, 1895; *Leighton*, *Proc. Zool. Soc.* 1907, p. 1045.

Cephalophela doriæ, *Knottnerus-Meyer*, *Arch. Naturgesch.* vol. lxxiii, pt. 1, p. 99, 1907.

Type of *Cephalophela*.

Typical locality Sierra Leone.

Size small, height at shoulder about 16 inches. General colour pale rufous, marked with about a dozen broad transverse black bands on the back, commencing just behind the shoulder and extending to the root of the tail; face (with the exception of the blackish nasal region), ears, neck, and shoulders rufous or chestnut; under-parts rather paler than rufous of back; legs rufous with broad black patches on outer side of shanks and wholly black pasterns; large glandular tufts on hocks; tail rufous mixed with black above, white below; horns small, seldom exceeding two inches in length. Skull stout, with the nasal region broad, flat, and parallel-sided, shallow lachrymal depressions, and the frontal region not markedly inflated; horn-cores directed downwards and backwards, forming grooves in the parietals; the three notches on hind border of palate nearly equal in depth. Basal length of skull $5\frac{4}{5}$ inches, width $2\frac{4}{5}$, length from orbit to muzzle $3\frac{2}{5}$ inches.

The range extends along the interior of the west coast of Africa from Liberia to Sierra Leone.

55. 12. 24. 294. Imperfect skin. Sierra Leone. Type. From Dr. J. Gould's collection. *Purchased*, 1855.

87. 9. 15. 2. Skin, mounted. Du Queah Valley, Liberia; collected by Dr. J. Büttikofer. Also skeleton. *Purchased*, 1887.

87. 9. 15. 3. Skin and skeleton, female. Same locality and collector. *Same history.*

38. 4. 16. 237. Skin. Sierra Leone. Type of *Antilope zebra*. *Purchased*, 1836.

XXIII. CEPHALOPHUS NIGER.

Cephalophus niger, *Gray, Ann. Mag. Nat. Hist.* ser. i, vol. xviii, p. 165, 1846, *List Osteol. Brit. Mus.* p. 57, 1847, *Knowsley Menagerie*, p. 10, pl. vii, 1850, *Proc. Zool. Soc.* 1850, p. 123, 1871, p. 597, *Cat. Ungulata Brit. Mus.* p. 84, 1852, *Cat. Ruminants Brit. Mus.* p. 27, 1872, *Hand-List Ruminants Brit. Mus.* p. 96, 1873; *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 236, 1862; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 166, 1869; *Jentink, Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 132, 1887, *Notes Leyden Mus.* vol. x, p. 20, 1887, *Cat. Mamm. Leyden Mus.* (*Mus. Pays-Bas*, vol. xi) p. 162, 1892, *Büttikofer, Reisebild. Liberia*, vol. ii, p. 376, 1890; *Thomas, Proc. Zool. Soc.* 1892, p. 425; *Matschie, Mitth. deutsch. Schutzgebiet*, vol. vi, p. 81, 1893; *Lydekker, Horns and Hoofs*, p. 212, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 160, 1908; *Sclater and Thomas, Book of Antelopes*, vol. i, p. 175, pl. xiv, fig. 1, 1895; *Pousargues, Ann. Sci. Nat., Zool.* ser. 7, vol. iv, p. 41, 1897.

Antilope pluto, *Temminck, Esquiss. Zool. Guiné*, pp. 194 and 214, 1853; *Wagner, Schreber's Säugthiere, Suppl.* vol. v, p. 422, 1855.

Cephalopidium nigrum, *Knottnerus-Meyer, Arch. Naturgesch.* vol. lxxiii, pt. 1, p. 99, 1907.

Type of *Cephalopidium*.

Typical locality Guinea.

Size medium; shoulder-height about 18 inches. General colour uniform dark smoky brown, darkest on rump and limbs, and palest on throat and chest; face tawny, darkening into rich rufous on crest, but centre of forehead in some instances brown, or even black; ears black on back, rufous inside; tail black above, with whitish terminal tuft. Horns usually from 3 to 3½ inches in length, straight, with rough bases; small ones present in female. Skull long and narrow, with an inflated frontal region, middle notch on hind border of palate slightly deeper than lateral ones, and lachrymal pit relatively shallow; basal length 6¾, maximum width 3⅜, interval between front border of orbit and muzzle 4¼ inches.

The range extends from Liberia to the Gold Coast.

46. 2. 16. 2. Skull, with horns, and skin, female. Guinea; collected by Leyden Museum. Type.
Purchased, 1846.

92. 4. 23. 4. Skull, with horns, and skin, female. Fanti.
Purchased, 1892.

97. 1. 5. 5. Skull, with horns, and skin. Fanti. From the collection of Sir Victor Brooke, Bart.
Presented by Sir Douglas Brooke, Bart., 1897.

97. 1. 5. 6. Skin, female. Fanti. *Same history.*

7. 12. 8. 1. Skull, with horns. Freetown, Sierra Leone.
Presented by Major A. Pearce, 1907.

11. 6. 2. 17. Skull, with horns, and skin. Bibianaha, Gold Coast. *Presented by Dr. H. G. F. Spurrell*, 1911.

8. 6. 26. 3. Skull, with horns, and skin. Daru, Sierra Leone. *Presented by Capt. L. Murray*, 1908.

8. 6. 26. 4. Skull, with horns, and skin, female. Same locality. *Same history.*

8. 6. 26. 5. Skull, with horns, and skin. Same locality.
Same history.

8. 6. 26. 6. Imperfect skull, with horns, and skin, female.
Same history.

4. 6. 2. 11. Skull, with horns, and skin. Monrovia, Liberia; collected by Mr. Alexander Whyte.
Presented by the Liberian Development Co., 1904.

5. 8. 18. 1. Skull, with horns, and skin. Monrovia.
Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1905.

82. 6. 12. 4. Young skin. Ankoba Valley, Wasa, Ashanti. *Presented by Capts. Burton and Cameron*, 1882.

97. 1. 5. 9. Three skulls, with horns, and skins. Gold Coast. From the collection of Sir Victor Brooke, Bart.
Presented by Sir Douglas Brooke, Bart., 1897.

XXIV. CEPHALOPHUS WALKERI.

Cephalophus walkeri, *Thomas*, *Proc. Zool. Soc.* 1906, p. 464; *Lydekker*, *Game Animals of Africa*, p. 159, 1908.

Typical locality Tuchila Valley, Nyasaland.

A dark-coloured species, about equal in size to *C. leucogaster* (p. 79). General colour dark greyish brown, approaching sepia, the hairs, except on back, where they are nearly black, being speckled with buffish; on underparts and inner sides of limbs the colour lightens to hair-brown; crest and front of face from muzzle to between horns black; chin and cheeks pale fawn, with a line of more distinct buff near the black above eyes; backs of ears grizzled brown

or blackish; a black line along nape and back connects dark area on face with that of loins; limbs dark, nearly black inferiorly; tail apparently with same white. The species may be allied to *niger*, but its true affinities cannot be determined till the male is known.

6. 4. 21. 1. Skin, female. Tuchila Valley, near Blantyre, Nyasaland. Type.

2. Subgenus GUEVEI.

Guevei, *Gray*, *Cat. Ungulata Brit. Mus.* p. 86, 1852; *Pocock*, *Proc. Zool. Soc.* 1910, pp. 867 and 876.

Inguinal glands wanting; horns and ears of the same general type as those of *Cephalophus*, the former general present in females as well as in males.

XXV. CEPHALOPHUS (GUEVEI) MAXWELLI.

Antilope (Cephalophus) maxwelli, *H. Smith*, *Griffith's Animal Kingdom*, vol. iv, p. 267, vol. v, p. 347, 1827; *Lesson*, *Hist. Nat. Mamm.* p. 294, 1836, *Nouv. Tabl. Règn. Anim.*, *Mamm.* p. 178, 1842; *Giebel*, *Zeitschr. ges. Nat.* vol. xxxv, p. 43, 1870.

Antilope (Cephalophus) philantomba, *H. Smith*, *Griffith's Animal Kingdom*, vol. v, p. 349, 1827; *Ogilby*, *Proc. Zool. Soc.* 1836, p. 121; *Lesson*, *Hist. Nat. Mamm.* p. 295, 1836, *Nouv. Tabl. Règn. Anim.*, *Mamm.* p. 178, 1842; *Waterhouse*, *Cat. Mamm. Mus. Zool. Soc.* p. 41, 1838; *Schinz. Synop. Mamm.* vol. ii, p. 422, 1845.

Cephalophus maxwelli, *A. Smith*, *S. African Quart. Journ.* vol. ii, p. 216, 1834; *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 166, 1846, *List Osteol. Brit. Mus.* p. 146, 1847, *Knowsley Menagerie*, p. 11, pl. xi, a, 1850, *Proc. Zool. Soc.* 1850, p. 124, 1871, p. 600, *Cat. Ruminants Brit. Mus.* p. 28, 1872, *Hand-List Ruminants Brit. Mus.* p. 97, 1873; *Temminck*, *Esquiss. Zool. Guiné*, pp. 194 and 223, 1853; *Gerrard*, *Cat. Bones Mamm. Brit. Mus.* p. 237, 1862; *Sclater*, *Proc. Zool. Soc.* 1868, p. 625; *Murie*, *ibid.* p. 595; *Garrod*, *ibid.* 1877, p. 4; *Flower and Garson*, *Cat. Osteol. Mus. R. Coll. Surg.* pt. ii, p. 269, 1884; *Jentink*, *Notes Leyden Mus.* vol. x, p. 21, 1887, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 133, 1887, *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 163, 1892; *Büttikofer*, *Reisebilder Liberia*, vol. ii, p. 379, 1890; *Thomas*, *Proc. Zool. Soc.* 1892, p. 425; *Lydekker*, *Horns and Hoofs*, p. 212, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 160, 1908; *Matschie*, *Mitth. deutsch. Schutzgebiet*, vol. vi, p. 81, 1893, *Sitzber. Ges. nat. Freunde*, 1893, p. 256; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 179, pl. xxi, fig. 2, 1895; *Pousargues*, *Ann. Sci. Nat.*, *Zool.* ser. 7, vol. iv, p. 42, 1897.

Cephalophus philantomba, *A. Smith*, *S. African Quart. Journ.* vol. ii, p. 317, 1834.

Antilope maxwellii, *Owen*, *Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii, p. 633, 1868.

Antilope frederici, *Laurillard*, *Dict. Univ. Hist. Nat.* vol. i, p. 623, 1841; *Lesson*, *Nouv. Tabl. Règn. Anim., Mamm.* p. 178, 1842; *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. iv, p. 454, 1844; *Giebel*, *Säugethiere*, p. 321, 1855.

Cephalophus punctulatus, *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 167, 1846, *Knowsley Menagerie*, p. 11 (non. pl. viii, fig. 1 = *C. sylvicultrix*), 1850, *Proc. Zool. Soc.* 1850, p. 125, 1871, p. 600, *Cat. Ungulata Brit. Mus.* p. 88, 1852, *Cat. Ruminants Brit. Mus.* p. 29, 1972, *Hand-List Ruminants Brit. Mus.* p. 98, 1873; *Temminck*, *Esquiss. Zool. Guiné*, pp. 194 and 236, 1853; *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 166, 1869.

Sylvicapra philantomba *and* S. frederici, *Sundevall*, *K. Svenska Vet.-Ak. Handl.* 1844, p. 190, 1846.

Cephalophus whitfieldi, *Gray*, *Knowsley Menagerie*, p. 11, pl. xi, fig. 2, 1850, *Proc. Zool. Soc.* 1850, p. 125, 1871, p. 599, *Cat. Ungulata Brit. Mus.* p. 88, 1852, *Cat. Ruminants Brit. Mus.* p. 28, 1872, *Hand-List Ruminants Brit. Mus.* p. 97, 1873; *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 166, 1869.

Cephalophus [Guevei] maxwelli, *Gray*, *Cat. Ungulata Brit. Mus.* p. 86, 1852.

Antilope (Cephalolophus) maxwelli, punctulatus, *and* whitfieldi, *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. v, pp. 427-429, 1855.

Cephalophus frederici, *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 166, 1869.

Guevei maxwelli, *Pocock*, *Proc. Zool. Soc.* 1910, p. 867.

Type of *Guevei*.

Typical locality Sierra Leone.

Size considerably less than in *niger*, the shoulder-height being only about 14 inches; length of ear 2, of hind-foot $6\frac{3}{4}$ inches. General colour uniform slaty brown, paler on under-parts and inner sides of limbs; eyebrow-streaks whitish; ears, which are small and rounded, dark brown on backs; rump and base of tail coloured like body, except that the upper side of the root of the tail and immediately adjacent area is rather darker; remainder of tail brown above, whitish beneath; outer sides of legs coloured like body; horns directed at a slight angle to plane of face, short, usually about 2 inches in length; skull broad and stout, with relatively narrow muzzle and rather shallow lachrymal depressions; middle notch of hind border of palate about $\frac{1}{6}$ of an inch in advance of lateral pair. Basal length of skull $4\frac{3}{4}$, maximum width $2\frac{1}{2}$, length from muzzle to orbit $2\frac{3}{4}$ inches.

The range extends through the forest-region of the west side of Africa from Gambia to the Gold Coast.

46. 11. 2. 6. Immature skin and associated skull and horns (46. 11. 20. 3). Gambia; collected by Mr. J. Whitfield. Type of *C. whitfieldi*. *Presented by the Earl of Derby*, 1846.

987, *i*. Skull, with horns, immature. Sierra Leone. Type of *C. punctulatus*. *Presented by Col. Sabine, about* 1846.

48. 10. 11. 5. Skull, with horns, and skin. West Africa. *Presented by the Earl of Derby*, 1848.

78. 7. 16. 5. Skull and skin, female. Fanti. *Purchased*, 1878.

69. 3. 5. 11. Immature skull and skin. Bred in Zoological Society's Menagerie. *Presented by the Zoological Society*, 1869.

97. 1. 5. 10. Two skins. Fanti. From the collection of Sir Victor Brooke, Bart. *Presented by Sir Douglas Brooke, Bart.*, 1897.

4. 6. 2. 12. Skull and skin, female. Liberia. *Presented by the Liberian Development Co.*, 1904.

8. 6. 26. 7. Skull and skin, female. Daru, Sierra Leone. *Presented by Capt. L. Murray*, 1908.

10. 4. 9. 29. Skull, with horns, and skin. Gunnal, Portuguese Guinea. *Presented by Dr. W. J. Ansorge*, 1910.

10. 4. 9. 30. Young skull. Same locality. *Same history.*

11. 6. 2. 15. Skin. Bibianaha, Gold Coast. *Presented by Dr. H. G. F. Spurrell*, 1911.

11. 6. 2. 16. Skin, female. Same locality. *Same history.*

12. 5. 9. 11. Skin. Mount Barclay, Liberia. *Presented by R. H. Bunting, Esq.*, 1912.

94. 7. 25. 4. Skull, female. Benin. *Presented by A. Millson, Esq.*, 1894.

7. 11. 19. 3. Young skull. Oban, Nigeria. *Presented by Mrs. P. A. Talbot*, 1907.

7. 12. 8. 4. Young skull, female. Sierra Leone. *Presented by Major A. Pearce*, 1907.

62. 12. 29. 7. Foetal skeleton. Zoological Society. *Purchased*, 1862.

46. 2. 16. 3. Skull, with horns, and skin. Guinea; collected by Leyden Museum. *Purchased*, 1846.

XXVI. CEPHALOPHUS (GUEVEI) MELANORHEUS.

Cephalophus melanorheus, *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 167, 1846, *Knowsley Menagerie*, p. 11, pl. x, 1850, *Proc. Zool. Soc.* 1850, p. 125, 1871, p. 600, *Cat. Ungulata Brit. Mus.* p. 88, 1852, *Cat. Ruminants Brit. Mus.* p. 28, 1872, *Hand-List Ruminants Brit. Mus.* p. 98, 1873; *Temminck*, *Esquiss. Zool. Guiné*, pp. 194 and 236, 1853; *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 166, 1869; *Peters*, *Monatsber. Ak. Berlin*, 1876, p. 482; *Matschie*, *Arch. Nat.* 1891, pt. 1, pp. 353 and 354; *Thomas*, *Proc. Zool. Soc.* 1892, p. 426; *Lydekker*, *Horns and Hoofs*, p. 212, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 161, 1908; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 185, 1895; *Pousargues*, *Ann. Sci. Nat., Zool.* ser. 7, vol. iv, p. 43, 1897.

Antilope (Cephalophus) melanorheus, *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. v, p. 428, 1855.

Cephalophus melanorheneus, *Alexander*, *From Niger to Nile*, vol. ii, p. 391, 1907.

Guevei melanorheus, *Pocock*, *Proc. Zool. Soc.* 1910, p. 870; *Cabrera*, *Cat. Met. Mam. Mus. Madrid*, p. 122, 1912.

Typical locality Fernando Po.

Differs from *maxwelli* by its inferior size (shoulder-height about 13 inches), and by the brown of the back shading into black on and at each side of the base of the tail, below which there is a sudden change to white on the hips. Foot-glands consisting of a simple tube, not extending so far as the lateral hoofs, and not expanded into a dilatation between the bones in the manner of *maxwelli*. Horns of males but little larger than those of females.

The range includes the country south and east of the Niger, extending on the west coast from the Cameruns to Angola, and eastwards to the coast, opposite Zanzibar, Uganda, and B. E. Africa. The following features serve to distinguish four of the local races of the species:—

A. Black of back extending on to croup.
 a. Under-parts pale slaty brown *C. m. melanorheus.*
 b. Under-parts darker (dark isabella-brown) *C. m. œquatorialis.*
 c. Under-parts drab..... *C. m. musculoides.*

B. Black of dorsal area restricted to region immediately round root of tail *C. m. anchietœ.*

The fifth race is too imperfectly known to be included in this key.

A.—Cephalophus melanorheus melanorheus.

Cephalophus melanorheus typicus, *Sclater and Thomas, Book of Antelopes*, vol. i, p. 185, 1895.

Typical locality Fernando Po.

General characters those given above.

42. 11. 4. 29. Skin, female. Fernando Po. Type.
Presented by Mrs. Thomson, 1842.

42. 11. 4. 30. Skull, with horns, and skin, young. Fernando Po. *Same history.*

3. 1. 6. 5. Skin. Fernando Po.
Presented by Boyd Alexander, Esq., 1903.

4. 7. 1. 128. Skull and skin, female. Bilelipi, Fernando Po; collected by Mr. E. Seimund.
Presented by the Fernando Po Commission, 1904.

4. 7. 1. 129–136. Skins and skulls of two adult males, three adult females, one young male, and two young females. Bantabiri, Fernando Po; collected by Mr. Seimund.
Same history.

51. 11. 14. 31. Skull, Fernando Po; collected by Mr. L. Fraser. *Purchased*, 1851.

51. 11. 14. 34. Skeleton. Same locality and collector.
Same history.

90. 5. 30. 1. Young, in spirit. Fernando Po.
Presented by J. G. Thrupp, Esq., 1890.

B.—Cephalophus melanorheus sundevalli.

Cephalophus pygmæus sundevalli, *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 166, 1869.

Cephalophus melanorheus sundevalli, *Sclater and Thomas, Book of Antetopes*, vol. i, p. 185, 1895.

Typical locality Eastern Africa.

Characters imperfectly known.

74. 4. 20. 3. Skull, with horns, and skin. Zanzibar.
Presented by Sir John Kirk, G.C.M.G., K.C.B., 1874.

68. 9. 9. 1. Skull and skin, female. Zanzibar.
Same donor, 1868.

C.—Cephalophus melanorheus anchietæ.

Cephalophus anchietæ, *Bocage*, *Proc. Zool. Soc.* 1878, p. 743.

Typical locality Angola.

Provisionally admitted as a race. Said to differ from typical *melanorheus* by the smaller extent of the black, which is restricted to the region round the tail, instead of extending on to the croup.

10. 7. 20. 1. Skull, with horns, and skin. Cubal Valley, 100 miles inland from Benguela, Angola.

Presented by H. F. Varian, Esq., 1910.

10. 4. 8. 31. Skull, with horns, and skin. N'dalla Tando, Angola; collected by Dr. W. J. Ansorge.

Purchased, 1910.

D.—Cephalophus melanorheus æquatorialis.

Cephalophus æquatorialis, *Matschie*, *Sitzber. Ges. nat. Freunde*, 1892, p. 112, *Säugethiere Deutsch-Ostafrika*, p. 115, 1895; *Scott-Elliott*, *Proc. Zool. Soc.* 1895, p. 341; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 189, 1895; *Lydekker*, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 161, 1908.

Cephalophus æquinoctialis, *Lydekker*, *Horns and Hoofs*, p. 209, 1893.

(?) Cephalophus æquatorialis bakeri, *M. Rothschild and Neuville*, *C. R. Ac. Sci. Paris*, vol. cxliv, p. 219, 1907; *Lydekker*, *Game Animals of Africa*, p. 162, 1908.

Guevei æquatorialis, *Pocock*, *Proc. Zool. Soc.* 1910, p. 870.

Typical locality Chagwi, Uganda.

Differs from typical race by the darker under-parts, which are described as dark isabella-brown. Pocock (who suggested that this duiker may be merely a race of *melanorheus*, from which it was considered inseparable by Pousargues) states that the foot differs from that of *maxwelli* by the absence of white spots on the back of the pastern and on front above main interdigital cleft. The so-called *C. æ. bakeri* does not appear to present characters of racial value.

99. 6. 10. 1. Skin, mounted. Uganda.

Presented by Sir F. J. Jackson, K.C.M.G., C.B., 1899.

93. 10. 18. 2. Skull and skin, female. Somerset Hill, Uganda. *Presented by Capt. W. H. Williams*, 1893.

93. 10. 18. 3. Skin, immature. Same locality.
Same history.

1. 8. 9. 67. Skull, with horns, and skin. Entebbe, Uganda.
Presented by Sir H. H. Johnston, K.C.M.G., K.C.B., 1901.

1. 8. 9. 85. Skeleton, female. Kampala, Uganda.
Same history.

1. 8. 9. 132. Skeleton. Kampala. *Same history.*

3. 7. 5. 1–2. Two skins. Elgeyu Escarpment, B. E. Africa. *Presented by F. W. Isaac, Esq.*, 1903.

98. 10. 10. 2. Skull, with horns, and skin. Uganda.
Presented by Capt. H. J. Madocks, 1898.

95. 3. 5. 5. Skull and skin, female.
Presented by G. F. Scott-Elliott, Esq., 1895.

7. 10. 1. 12. Skull, female. Budongo Forest, Uganda.
Presented by L. M. Seth-Smith, Esq., 1907.

E.—Cephalophus melanorheus musculoides.

Cephalophus monticola musculoides, *Heller*, *Smithson. Misc. Collect.* vol. lxi, no. 7, p. 8, 1913.

Typical locality Kagumeja Forest, B. E. Africa.

Type in U. S. National Museum.

Distinguished from *æquatorialis* by larger size and light under-parts, which contrast markedly with flanks. Heller classes both this form and *æquatorialis* (which was described by Sclater and Thomas as very close to *melanorheus*) as races of *monticola*, in which he may perhaps intend to include *melanorheus*.

The following specimen is provisionally referred to this race:—

10. 10. 14. 7. Skull and skin, female. Kwali Forest, Shimba Hills, British East Africa; collected by Mr. R. Kemp.
Presented by C. D. Rudd, Esq., 1910.

Specifically Undetermined Specimens.

3. 2. 4. 28. Skull, with horns, and skin. Batianga, Cameruns; collected by G. L. Bates, Esq. *Purchased*, 1903.

62. 6. 28. 2. Skull, with horns, and skin. Cameruns; collected by Mrs. Burton. *Purchased*, 1862.

71. 7. 8. 6. Skin, female. Cameruns. *Purchased*, 1871.

71. 7. 8. 7. Skull and skin, female. Cameruns. *Purchased*, 1871.

71. 5. 27. 4. Skull, with horns, and skin. Gabun. *Presented by Monsieur P. du Chaillu*, 1871.

7. 7. 8. 225. Skull, with horns, and skin. Molegbwe, near Banzyville, Wellé Valley. *Presented by the Alexander-Gosling Expedition*, 1907.

7. 7. 8. 226. Skull, with horns, and skin. Guraba Valley, Northern Nigeria. *Same history.*

7. 7. 8. 227. Skull, with horns, and skin. Kemmo, Northern Nigeria. *Same history.*

7. 7. 8. 228. Skull and skin, female. Kemmo. *Same history.*

10. 6. 1. 42. Skin. Nkami, north-east of Oban, Southern Nigeria. *Presented by P. A. Talbot, Esq.*, 1910.

10. 6. 1. 43. Skull and skin, female. Same locality. *Same history.*

10. 6. 1. 44. Skin. Ndebbyi, Oban. *Same history.*

7. 1. 2. 6. Skull, with horns, and skin. Avakubi, Eastern Congo Forest. *Presented by R. B. Woosnam, Esq.*, 1907.

62. 6. 21. 5. Skeleton. West Africa; Zoological Society. *Purchased*, 1862.

XXVII. CEPHALOPHUS (GUEVEI) MONTICOLA.

Capra monticola, *Thunberg*, *Reise*, vol. ii, p. 66, 1789.

Antilope monticola, *Thunberg*, *Mém. Ac. Sci. St. Pétersb.* vol. iii, p. 314, 1811; *Afzelius*, *Nova Acta Soc. Upsal.* vol. vii, p. 220, 1815.

Antilope pygmæa, *Schinz*, *Cuvier's Thierreich*, vol. i, p. 393, 1821, *Synop. Mamm.* vol. ii, p. 417, 1845; *Burchell*, *List Quadr. presented to Brit. Mus.* p. 6, 1825; *Lichtenstein*, *Darstellung. Säugethiere*, pl. xvi, fig. 1, 1828; *J. B. Fischer*, *Synop. Mamm.* p. 462, 1829; *Smuts*, *Enum. Mamm. Cap.* p. 86, 1832; *Owen*, *Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, p. 633, 1868; *Waterhouse*, *Cat. Mamm. Mus. Zool. Soc.* p. 41, 1838; *Laurillard*, *Dict. Univ. Hist. Nat.* vol. i, p. 623, 1841; *Wagner*, *Schreber's Säugthiere*, vol. iv, p. 452, 1844, vol. v, p. 429, 1855; *Peters*, *Reise nach Mozambique*, *Säugeth.* p. 184, 1854; *Giebel*, *Säugethiere*, p. 322, 1855.

Antilope (Cephalophus) cærulea, *H. Smith*, *Griffith's Animal Kingdom*, vol. iv, p. 268, vol. v, p. 348, 1827; *Lesson*, *Hist. Nat. Mamm.* vol. x, p. 294, 1836, *Nouv. Tabl. Règn. Anim.*, *Mamm.* p. 178, 1842; *Schinz*, *Synop. Mamm.* vol. ii, p. 422, 1845.

Antilope (Cephalophus) perpusilla, *H. Smith*, *Griffith's Animal Kingdom*, vol. iv, p. 269, vol. v, p. 348, 1827; *A. Smith*, *S. African Quart. Journ.* vol. ii, p. 217, 1834; *Lesson*, *Hist. Nat. Mamm.* vol. x, p. 294, 1836, *Nouv. Tabl. Règn. Anim.*, *Mamm.* p. 178, 1842.

Cephalophus cæruleus, *A. Smith*, *S. African Quart. Journ.* vol. ii, p. 216, 1834; *Harris*, *Wild Anim. S. Africa*, pl. xxvi, fig. 2, 1840; *Gray*, *List Mamm. Brit. Mus.* p. 163, 1843; *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 133, 1887, *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 163, 1892.

Antilope perspisilla, *Owen*, *Proc. Zool. Soc.* 1836, p. 3, *Anat. Vertebrates*, vol. iii, p. 633, 1868.

(?) Tragulus pygmæus, *Ogilby*, *Proc. Zool. Soc.* 1836, p. 138, teste *Pocock*, 1910.

Tragelaphus pygmæus, *Rüppell*, *Verzeichniss Mus. Senckenberg*, pt. 1, p. 37, 1842.

Antilope minuta, *Forster*, *Descrip. Anim.* p. 383, 1844.

Sylvicapra pygmæa, *Sundevall*, *K. Svenska Vet.-Ak. Handl.* 1844, p. 190, 1846.

Cephalophus monticola, *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 167, 1847, *Knowsley Menagerie*, p. 11, 1850, *Proc. Zool. Soc.* 1850, p. 124; *Turner*, *Proc. Zool. Soc.* 1850, p. 170; *Blyth*, *Cat. Mus. Asiat. Soc. Bengal*, p. 168, 1863; *Bocage*, *Proc. Zool. Soc.* 1878, p. 743; *Thomas*, *ibid.* 1892, p. 477; *Nicolls and Eglington*, *Sportsman in S. Africa*, p. 29, 1892; *Lydekker*, *Horns and Hoofs*, p. 207, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 162, 1908; *Rendall*, *Proc. Zool. Soc.* 1895, p. 361; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 191, pl. xxi, fig. 1, 1895; *Pousargues*, *Ann. Sci. Nat.*, *Zool.* ser. 7, vol. iv, p. 45, 1897; *Matschie*, *Säugethiere Deutsch-Ostafrika*, p. 115, 1895; *Kirby*, *Proc. Zool. Soc.* 1899, p. 830; *W. L. Sclater*, *Fauna S. Africa*, *Mamm.* vol. i, p. 163, 1900.

Cephalophus pygmæus, *Gray*, *Cat. Ungulata Brit. Mus.* p. 87, 1852 (Guevei), *Proc. Zool. Soc.* 1871, p. 599, *Cat. Ruminants Brit. Mus.* p. 28, 1872, *Hand-List Ruminants Brit. Mus.* p. 97, 1873; *Sclater*, *Proc. Zool. Soc.* 1861, p. 209; *Gerrard*, *Cat. Bones Mamm. Brit. Mus.* p. 237, 1862; *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 166, 1869; *Garrod*, *Proc. Zool. Soc.* 1877, p. 4; *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 153, 1887, *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 164, 1892; *Bryden*, *Kloof and Karroo*, p. 301, 1889.

Cephalophus bicolor, *Gray*, *Proc. Zool. Soc.* 1862, p. 263, pl. xxiv, 1871, p. 600, *Cat. Ruminants Brit. Mus.* p. 29, 1872, *Hand-List Ruminants Brit. Mus.* p. 98, 1873.

Cephalophus pygmæus caffer, *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 166, 1869; *Matschie*, *Sitzber. Ges. nat. Freunde*, 1897, p. 158.

Guevei monticola, *Pocock*, *Proc. Zool. Soc.* 1910, p. 870.

Typical locality Cape Colony.

Size and horns approximately the same as in *melanorheus*

(shoulder-height about 13 inches), colour as in *maxwelli*, except that the legs are bright rufous from the knees and hocks to the hoofs. The range extends through the wooded districts of South Africa from Cape Colony to Angola on the west and Natal, Zululand, B. E. Africa and Rhodesia on the east. The Zulu form described as *C. pygmæs caffer* is stated to be of a duller fulvescent colour than the typical Cape animal.

48. *a*. Skull, with horns, and skin. Galgebosch, Uitenhage, Cape Colony. Type of *Antilope cærulea*.
Presented by Dr. W. J. Burchell, about 1817.

42. 4. 10. 8. Skull and skin, female. South Africa; collected by Dr. Krauss. *Purchased*, 1842.

62. 10. 21. 1. Skull, with horns, and skin, immature. Umgozi Forest, Zululand. Type of *C. bicolor*.
Presented by W. Fosbrooke, Esq., 1862.

62. 10. 21. 2. Skull, with horns, immature. Same locality.
Same history.

51. 5. 5. 14–16. Three skulls, with horns. South Africa.
Purchased, 1851.

4. 5. 1. 80–82. Three skulls and skins, female. Sibudeni, Zululand; collected by Mr. C. H. B. Grant.
Presented by C. D. Rudd, Esq., 1904.

4. 5. 1. 83, 84. Two immature skulls and skins, female. Same locality and collector. *Same history.*

4. 8. 31. 8. Skull, with horns, and skin, immature. Same locality and collector. *Same history.*

8. 1. 1. 123, 124. Two skulls, with horns, and skins, one immature. Tambarara, Portuguese East Africa; same collector. *Same donor*, 1908.

8. 1. 1. 124. Skull and skin. Same locality and collector.
Same history.

72. 10. 21. 5. Skull, with horns, and skin, immature. Eland's Port, South-east Africa; collected by F. C. Atmore, Esq. *Purchased*, 1872.

8. 7. 19. 36. Skin. Chirinda Forest, Melsetter, Rhodesia.
Presented by C. F. M. Swynnerton, Esq., 1908.

99. 6. 17. 1. Skull and skin, female. Gorongoza Hills, South-east Africa. *Presented by F. Barneby, Esq.*, 1899.

5. 5. 7. 110. Two skulls, with horns, and skins—one

male and one female. Knysna, Cape Colony; collected by Mr. C. H. B. Grant. *Presented by C. D. Rudd, Esq.*, 1905.

7. 6. 2. 106. Skull, with horns, and skin. Beira, Portuguese East Africa; same collector. *Same donor*, 1907.

XXVIII. CEPHALOPHUS (GUEVEI) NYASÆ.

Cephalophus nyasæ, *Thomas*, *Ann. Mag. Nat. Hist.* ser. 7, vol. ix, p. 58, 1902; *Wroughton*, *Mem. Manchester Mus.* vol. li, no. 5, p. 24, 1907; *Lydekker*, *Game Animals of Africa*, p. 164, 1908.

Typical locality Mlanje, Nyasaland.

Distinguished from *C. monticola* by the larger amount of rufous on the limbs and body, the much longer and narrower skull, and the elongated hoofs. Typically the back a darker brown than in *monticola*, with a stronger tinge of rufous; shoulders, flanks, and thighs dull deep rufous; under-parts greyish rufous; limbs, except between inner and lateral hoofs, where they are brown, bright rich rufous; rump dark chocolate-brown; under side of tail still darker blackish brown; forehead (as usual in the group) dark with rufous eyebrow-streaks; backs of ears brown, with a small rufous patch near front of base; a few white patches on under side of body between the fore and the hind legs. Basal length of skull $4\frac{9}{16}$ inches (115 mm.), maximum width $2\frac{1}{4}$ inches (56 mm.), length from orbit to muzzle $2\frac{5}{8}$ inches (67 mm.).

The two races are distinguished as follows:—

A. A considerable red area on flanks and thighs, and legs strongly rufous..... *C. n. nyasæ.*

B. Red area on body larger and legs more strongly rufous..... *C. n. defriesi.*

A.—Cephalophus nyasæ nyasæ.

Typical locality Mlanje.

General characters those given above.

1. 11. 11. 2. Skull, with horns, and skin. Mlanje, Nyasaland; collected by Mr. H. Brown. Type. *Purchased*, 1901.

1. 11. 11. 3. Skin. Same locality and collector. *Same history.*

8. 10. 22. 2. Skin, mounted. Kalungwisi, Lake Mweru. *Presented by J. Rowland Ward, Esq.*, 1908.

7. 1. 11. 81. Skull, with horns, and skin. Petauki, Rhodesia; collected by S. A. Neave, Esq. *Purchased*, 1907.

99. 6. 28. 17. Skull, with horns, and skin. Tanganyika Plateau. *Presented by Lieut.-Col. Manning*, 1899.

9. 11. 25. 1. Skin. Zomba, Nyasaland. *Presented by Sir Alfred Sharpe, K.C.M.G., C.B.*, 1909.

12. 6. 26. 1. Skull, with horns, and skin. Blantyre, Nyasaland. *Presented by D. D. Lyell, Esq.*, 1912.

B.—Cephalophus nyasæ defriesi.

Cephalophus nyasæ defriesi, *Rothschild*, *Proc. Zool. Soc.* 1904, vol. i, p. 229.

Typical locality Itambe, between Lakes Mweru and Tanganyika, northern Rhodesia.

Type in Tring Museum.

Differs from typical race by larger extent of red on flanks and thighs and more strongly rufous legs; the greater amount of white on under-parts, the paler greyish brown of upper surface, and the broader and more rufous brow-streak. The type is very similar to the Mlanje specimen of *nyasæ nyasæ*.

No specimen in collection.

C.—Cephalophus nyasæ congicus.

Cephalophus nyasæ congicus, *Lönnberg*, *Arkiv Zool.* vol. iv, no. 16, p. 12, 1908; *Lydekker*, *Game Animals of Africa*, *Suppl.* p. 8, 1911.

Typical locality Congo.

Type in Stockholm Museum.

Distinguished from typical race by the back being warm sepia, of nearly the same tint from nape to rump. Towards the flanks this shades off into light smoky grey, with a slight buffy tinge, due to the tips of the hairs being of that colour, while the under surface is white. On the hams the hairs are sufficiently rufous at the tips to communicate a tinge of this colour, although the rest of the hairs are of the same grey as the flanks. The rufous tinge of the hams is sharply defined from the dark sepia-brown of the rump, but

shades into that of the back. The legs are rufous, with a smoky brown mark above the sides of hoofs; face nearly black, with a dull rufous brown stripe; tail black above and white beneath.

No specimen in collection.

XXIX. CEPHALOPHUS (GUEVEI) HECKI.

Cephalophus hecki, *Matschie*, *Sitzber. Ges. nat. Freunde*, 1897, p. 158; *Lydekker*, *Game Animals of Africa*, p. 165, 1908.

Typical locality Mozambique.

Type apparently in Berlin.

Said to be distinguished from *C. nyasæ* by having more, instead of less, white on under-parts, as compared with *monticola*, by being apparently less rufous on body, and by lacking the usual dark markings on back of pasterns; legs rufous, as in *monticola;* hoofs smaller than in either that species or *nyasæ*.

7. 6. 2. 106. Skin. Beira, Portuguese East Africa; collected by Mr. C. H. B. Grant.

Presented by C. D. Rudd, Esq., 1907.

XXX. CEPHALOPHUS (GUEVEI) SIMPSONI.

Cephalophus simpsoni, *Thomas*, *Ann. Mag. Nat. Hist.* ser. 8, vol. v, p. 92, 1910.

Typical locality Lukenye Valley, South Central Congo.

Smaller than *nyasæ*, with a relatively short skull; median dorsal area dark vandyke-brown for a breadth of about three inches, passing through burnt-umber into deep rufous on flanks and limbs; under-parts paler rufous, with the median region whitish, and the bases of the hairs everywhere grey; under side of lower jaw whitish; throat dull russet; crown and top of muzzle dark brown; eyebrow-streak and cheeks reddish; a line on inner side of fore-legs and thighs white, limbs otherwise rufous. Basal length of skull $3\frac{15}{16}$ inches (99·5 mm.), maximum width $2\frac{1}{16}$ inches (51·5 mm.), length of upper series of cheek-teeth $1\frac{5}{16}$ inches (32·5 mm.). Its general reddish colour distinguishes this duiker from *C.*

melanorheus æquatorialis; while the shortness of the skull serves to differentiate it from *C. nyasæ*, which it closely resembles in external characters.

9. 12. 12. 13. Skull, with horns, and skin. Near Koli, Lukenye Valley, South Central Congo. Type.

Presented by E. Torday, Esq., 1909.

9. 12. 12. 14. Skin, female. Same locality. *Same history.*

XXXI. CEPHALOPHUS (GUEVEI) LUGENS.

Cephalophus lugens, *Thomas, Proc. Zool. Soc.* 1898, p. 393, *Thomas and Sclater, Book of Antelopes*, vol. iv, p. 224, 1900; *Lydekker, Game Animals of Africa*, p. 165, 1908.

Typical locality Urori, German East Africa.

A member of the *monticola-melanorheus* group distinguished by its large size and dark colour, as well as by the brown legs, which therefore differ from the red ones of *monticola* and *hecki*. General colour dark umber-brown, with forehead and top of muzzle nearly black; crest, which is unusually long, black; sides of face brown, with a whitish line above eye; backs of ears black on the front half; neck brown, like back, with hair of nape directed forwards; back darkening almost to black on loins, but no lighter patch on outer side of hips adjacent to this dark area, as in *melanorheus*, and the hips themselves uniformly brown, as in *monticola;* under-parts and inner sides of fore-legs pale mouse-colour; chin, under surface of jaw, and groin whitish; limbs dark brown, like back. Basal length of skull of immature female 4½ inches (114 mm.), maximum width 2½ inches (62·5 mm.).

98. 5. 25. 21. Skull and skin, female. Urori, Usangu, German East Africa. Type.

Presented by Sir Alfred Sharpe, K.C.M.G., C.B., 1898.

98. 5. 25. 22. Female fœtus associated with the preceding. *Same history.*

99. 6. 29. 8. Imperfect skin. Same locality.

Same donor, 1899.

3. Subgenus **SYLVICAPRA.**

Sylvicapra, *Ogilby, Proc. Zool. Soc.* 1836, p. 138; *Pocock, Proc. Zool. Soc.* 1910, p. 873.

Inguinal glands present; horns, which are usually wanting in female, directed upwards and backwards, so as to form an obtuse angle with the plane of the face; ears relatively long and pointed.

XXXII. CEPHALOPHUS (SYLVICAPRA) GRIMMI.

Capra grimmia, *Linn. Syst. Nat.* ed. 10, vol. i, p. 70, 1758.

Moschus grimmia, *Linn. Syst. Nat.* ed. 12, vol. i, p. 92, 1766.

Antilope nictitans, *Thunberg, Mém. Ac. Sci. St. Pétersb.* 1811, p. 312.

Cemas cana, *Oken. Lehrbuch Natugesch.* vol. iii, pt. 2, p. 743, 1816.

Antilope mergens, *Desmarest, Nouv. Dict. Hist. Nat.* ed. 2, vol. ii, p. 193, 1816, *Mamm.* vol. ii, p. 463, 1822; *Desmoulins, Dict. Class. Hist. Nat.* vol. i, p. 446, 1822; *Burchell, Travels S. Africa*, vol. i, p. 187, 1822, *List Quadr. presented to Brit. Mus.* p. 6, 1825; *H. Smith, Griffith's Animal Kingdom*, vol. iv, p. 264, vol. v, p. 346, 1827; *Lesson, Man. Mamm.* p. 378, 1827, *Hist. Nat. Mamm.* vol. x, p. 294, 1836, *Nouv. Tabl. Règn. Anim., Mamm.* p. 178, 1842; *Lichtenstein, Darstellung Säugethiere*, pl. xi, 1828; *J. B. Fischer, Synop. Mamm.* p. 467, 1829; *Smuts, Enum. Mamm. Cap.* p. 84, 1832; *Owen, Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii, p. 633, 1868; *Waterhouse, Cat. Mamm. Mus. Zool. Soc.* p. 41, 1838; *Gervais, Dict. Sci. Nat., Suppl.* vol. i, p. 262, 1840; *Wagner's, Schreber's Säugthiere, Suppl.* vol. iv, p. 447, 1844, vol. v, p. 418, 1855; *Schinz, Synop. Mamm.* vol. ii, p. 446, 1845; *Giebel, Säugethiere*, p. 320, 1855.

Antilope (Cephalophus) platous, *H. Smith, Griffith's Animal Kingdom* vol. iv, p. 260, vol. v, p. 344, 1827.

Antilope (Cephalophus) burchelli *and* ptoox, *H. Smith, Griffith's Animal Kingdom*, vol. iv, pp. 262 and 265, vol. v, pp. 345 and 347, 1827; *Lesson, Hist. Nat. Mamm.* vol. x, pp. 293 and 294, 1836, *Nouv. Tabl. Règn. Anim., Mamm.* p. 178, 1842.

Cephalophus platous *and* ptoox, *A. Smith, S. African Quart. Journ.* vol. ii, pp. 214 and 215, 1834.

Cephalophus burchelli, *A. Smith, S. African Quart. Journ.* vol. ii, p. 215, 1834; *Gray, List Mamm. Brit. Mus.* p. 162, 1843, *Cat. Ungulata Brit. Mus.* p. 81, 1852; *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 236, 1862; *Sclater, Proc. Zool. Soc.* 1868, p. 625.

Cephalophus mergens, *A. Smith, S. African Quart. Journ.* vol. ii, p. 215, 1834; *Harris, Wild Anim. S. Africa*, pl. xv, fig. 2, 1840; *Gray, List Mamm. Brit. Mus.* p. 162, 1843, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 163, 1846, *List Osteol. Brit. Mus.* p. 57, 1847; *Turner, Proc. Zool. Soc.* 1850, p. 170; *Temminck, Esquiss. Zool. Guiné*, p. 194, 1853; *Sclater, Proc. Zool. Soc.* 1868, p. 625; *Schmidt, ibid.* 1880, p. 307; *Brehm, Thierleben, Säugethiere*, vol. iii, p. 253, 1880; *Selous, Proc. Zool. Soc.* 1881, p. 763, *A*

Hunter's Wanderings in S. Africa, p. 223, 1881; *Flower and Garson, Cat. Osteol. Mus. R. Coll. Surg.* pt. ii, p. 270, 1884; *Mairet, Bull. Soc. Acclim.* ser. 4, vol. iv, p. 238, 1887; *Noack, Zool. Jahrb., Syst.* vol. iv, p. 114, 1889; *W. L. Sclater, Cat. Mamm. Ind. Mus.* pt. ii, p. 167, 1891.

Antilope (Cephalophus) platyotus, *Lesson, Hist. Nat. Mamm.* vol. x, p. 293, 1836.

Antilope burchelli, *Owen, Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii, p. 633, 1868.

Antilope (Grimmia) mergens, *Laurillard, Dict. Univ. Hist. Nat.* vol. i, p. 624, 1841.

Tragelaphus mergens, *Rüppell, Verzeichniss Mus. Senckenberg*, pt. 1, p. 37, 1842.

Antilope ptox *and* burchelli, *Schinz, Synop. Mamm.* vol. ii, pp. 417 and 420, 1845.

Sylvicapra mergens, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 190, 1846; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. i, p. 167, 1869.

Cephalophus grimmia, *Gray, Knowsley Menagerie*, p. 8, pls. i and ii, 1856, *Cat. Ungulata Brit. Mus.* p. 78, 1852; *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 237, 1862; *Blyth, Cat. Mamm. Mus. Asiat. Soc. Bengal*, p. 167, 1863; *Buckley, Proc. Zool. Soc.* 1876, p. 283, 1877, p. 453; *Lorenz, Ann. Hofmus. Wien*, vol. ix, p. 60, 1894; *O. Neumann, Sitzber. Ges. nat. Freunde*, 1899, p. 18.

Sylvicapra mergens *and* caffra, *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 167, 1869.

Grimmia nictitans, irrorata, *and* burchelli, *Gray, Proc. Zool. Soc.* 1871, pp. 589–592, *Cat. Ruminants Brit. Mus.* pp. 22–24, 1872, *Hand-List Ruminants Brit. Mus.* pp. 92 and 93, 1873.

Cephalophus grimmius, *Bocage, Proc. Zool. Soc.* 1878, p. 743.

Grimmia mergens, *Jentink, Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix), p. 132, 1887, *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 161. 1892, *Notes Leyden Mus.* vol. xv, p. 265, 1893.

Cephalophus grimmi, *Thomas, Proc. Zool. Soc.* 1892, p. 428, 1893, p. 504; *Ward, Records of Big Game*, p. 76, 1892, ed. 6, p. 160, 1910; *Nicolls and Eglington, Sportsman in S. Africa*, p. 27, 1892; *Lydekker, Horns and Hoofs*, p. 207, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 141, 1908; *Sclater and Thomas, Book of Antelopes*, vol. i, p. 203, pl. xxiii, 1895; *W. L. Sclater, Fauna S. Africa, Mamm.* vol. i, p. 157, 1900; *Warren, Ann. Natal Mus.* vol. ii, p. 235, 1910.

Sylvicapra grimmia, *Matschie, Säugethiere Deutsch-Ostafrika*, p. 117, 1895; *Lönnberg, Arkiv Zool.* vol. v, no. 10, p. 2, 1909.

Sylvicapra grimmi, *Pocock, Proc. Zool. Soc.* 1910, p. 874; *Heller, Smithson. Misc. Collect.* vol. lx, no. 8, p. 9, 1912; *Cabrera, Cat. Met. Mam. Mus. Madrid*, p. 122, 1912.

DUIKER-BOK.

Type of *Sylvicapra*.

Typical locality Cape Colony.

Distinguished from all other members of the group except

the next by the markedly obtuse angle formed by the relatively long and slender horns with the plane of the face, the longer and pointed ears, and the lighter and more slender build. Size medium to small, the shoulder-height ranging from 23 to 25 inches. General colour varying from pale greyish brown with a distinct blackish grizzle, owing to dark and light annulations on the hairs, through a yellowish phase, to uniformly bright ochery yellow. Horns generally absent in female. Inguinal glands present.

The species is taken to include all but one of the duikers in which the horns form a marked angle with the plane of the face. Pocock,* while remarking that *abyssinicus* is very closely allied to the typical *grimmi*, considers that it is probably only a subspecies of *coronatus*, to which he refers *campbelliæ* as a second subspecies: † if these views be correct, there can be little hesitation in regarding all the local forms of these obliquely horned duikers as referable to a single species. In this extended sense the range of the species will include the greater part of the more open parts of Africa south of the northern tropic, these duikers being less addicted to thick covert than are the members of the other two subgenera.

The following is a provisional attempt to form a "key" to the local races of the species;—a matter of great difficulty, owing to the slight differences on which many of them have been founded:—

A. Ears long, as much as 4½ inches; size large; shoulder-height 23 to 25 inches.
 a. Forehead rufous.
 a'. General colour grey fawn above and below ... *C. g. grimmi.*
 b'. General colour yellower (yellowish brown).
 a''. Short black tips to hairs; under-parts dark ... *C. g. flavescens.*
 b''. Black tips larger; under-parts white ... *C. g. altifrons.*
 b. Forehead with dark blaze, forming upward extension of nose-stripe ... *C. g. splendidulus.*
B. Ears shorter, 3½ inches or less in length.
 a. Pasterns yellow at sides; size small, 17 or 18 inches at shoulder.
 a'. Coat nearly uniform yellow ... *C. g. coronatus.*
 b'. Coat heavily speckled with black ... *C. g. campbelliæ.*

* *Op. cit.* p. 876. † *Ibid.* p. 873.

b. Pasterns wholly brown.
 a'. Forehead rufous.
 a''. Size small, 18 inches at shoulder; general colour yellowish grey *C. g. abyssinicus.*
 b''. Size larger.
 a^3. Colour darker than in last; no yellow on rump *C. g. nyansæ.*
 b^3. Colour yellower and more ochery, even on rump.
 a^4. Back yellow *C. g. hindei.*
 b^4. Back broccoli-brown *C. g. altivallis.*
 b'. Forehead with a dark blaze, owing to extension of nose-mark upwards to horns.
 a''. Size larger; colour yellowish..... *C. g. shirensis.*
 b''. Size smaller; colour greyer *C. g. roosevelti.*

A.—Cephalophus grimmi grimmi.

Typical locality South Africa.

Size large, shoulder-height from 23 to 25 inches; length of ear $4\frac{1}{2}$, of hind-foot $10\frac{1}{4}$ inches. Ears longer than interval between inner canthus of eye and extremity of nose, with narrow, pointed tips; general colour pale greyish brown (grey fawn), grizzled with black, owing to the yellowish and blackish brown annulation of the hairs; face rufous, with a deep brown longitudinal patch on nose; under-parts like back; chin, inner sides of upper portion of limbs, and lower surface of tail white or whitish; an indistinct brownish line down part of fore-legs near knees; pasterns wholly brown; more or less of upper side of tail black. Horns may attain a length of over 6 inches. Skull long and narrow, with the lachrymal depression of median length, and its superior border generally rounded; muzzle long; median palatine notch penetrating deeper than lateral ones. Basal length of skull $7\frac{1}{4}$, maximum width $3\frac{3}{8}$, length from orbit to muzzle $4\frac{2}{5}$ inches.

The range probably extends about to the Zambesi.

626, *b*. Skull, with horns. Zululand. Type of *C. burchelli*. *Presented by Dr. W. J. Burchell, about* 1817.

46. 6. 1. 9. Skin, female. South Africa. *Purchased* (*Stevens*), 1846.

46. 11. 18. 29. Skull, associated with the preceding. *Same history.*

46. 6. 1. 8. Immature skin. South Africa. *Same history.*

45. 11. 8. 6. Skull, with horns. South Africa.
Purchased, 1845.

13, *a* (626, *k*). Skull, with horns, and skin. South Africa. *No history.*

626, *q*. Skeleton. Zoological Society. *Purchased.*

46. 6. 2. 81. Skull, female. Cape of Good Hope. From Stockholm Museum. *Purchased*, 1846.

46. 10. 26. 14. Skin, associated with the preceding.
Same history.

46. 6. 2. 98. Skull, young female. Natal; collected by Herr J. Wahlberg. From Stockholm Museum.
Purchased, 1846.

85. 6. 29. 3. Skull and skin, female. Tati Valley, Matabililand. *Presented by F. C. Selous, Esq.*, 1885.

85. 6. 29. 4. Skull and skin, immature female. Same locality. *Same history.*

94. 4. 3. 3. Skull and skin, female. Lower Umvolosi Valley, Zululand.
Presented by the Christiania Museum, 1894.

94. 11. 4. 3. Skull, female. Fever Creek, De Kaap, Transvaal. *Presented by Dr. P. Rendall*, 1894.

49. 1. 30. 29. Skull, female. Cape of Good Hope.
Purchased, 1849.

82. 5. 25. 3. Skull, with horns, and skin. Near Port Elizabeth, Natal; collected by F. C. Selous, Esq.
Purchased, 1882.

6. 12. 12. 5. Skin, mounted. Zululand.
Presented by Allan Cameron, Esq., 1906.

9. 3. 2. 21. Skull and skin, female. Zoutpansberg, Transvaal. *Presented by Dr. J. Jameson*, 1909.

4. 5. 1. 85. Skull, with horns, and skin. Injusu, Zululand; collected by Mr. C. H. B. Grant.
Presented by C. D. Rudd, Esq., 1904.

4. 9. 1. 109. Skull and skin, female. Zuurbron, Transvaal; same collector. *Same history.*

6. 4. 3. 105–109. Five skulls and skins, four female. Woodbush, Transvaal; same collector. *Same donor*, 1906.

5. 12. 9. 2–3. One skull and skins, female. Klein Letaba, N. E. Transvaal; same collector. *Same donor*, 1905.

4. 12. 3. 94–98. Two male (fig. 11) and three female skulls and skins. Umvolosi, Zululand; same collector.

Same donor, 1904.

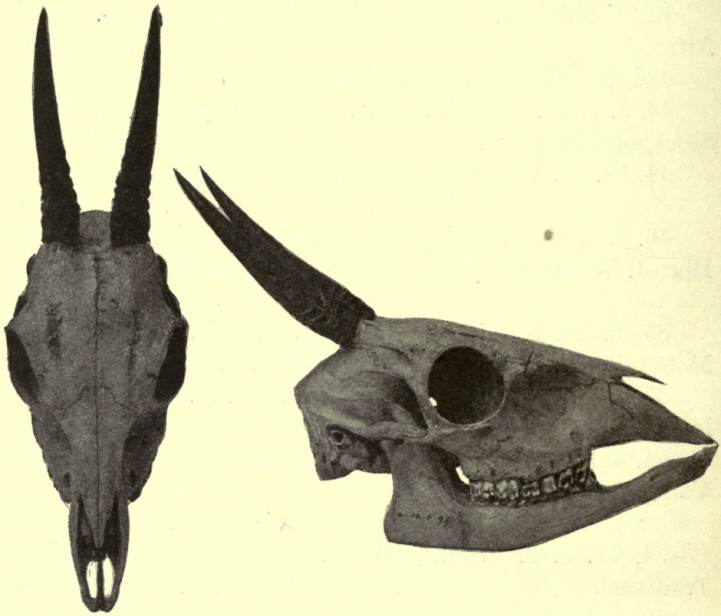


FIG. 11.—FRONT AND SIDE VIEWS OF SKULL AND HORNS OF DUIKERBOK (*Cephalophus grimmi*).

6. 11. 8. 136–138. Three female skulls and skins, two immature. Coguno, Inhambane; same collector.

Same donor, 1906.

B.—Cephalophus grimmi flavescens.

Cephalophus grimmia flavescens, *Lorenz*, *Ann. Hofmus. Wien*, vol. ix, p. 60, 1894.

Cephalophus grimmi flavescens, *Lydekker*, *Game Animals of Africa*, p. 143, 1908; *Wroughton*, *Ann. Mag. Nat. Hist.* ser. 8, vol. v, p. 274, 1910.

Typical locality Matabililand, near the Victoria Falls of the Zambesi.

Type in Vienna Museum.

Differs from typical race by the more brownish yellow general colour; the individual hairs of the back being but

slightly black at the tip, below which is a broad light ring.

No specimen in the collection can be definitely referred to this race.

C.—Cephalophus grimmi altifrons.

Antilope altifrons, *Peters*, *Reise nach Mozambique*, *Säugeth.* p. 184, pl. xxxvii, 1852; *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. v, p. 418, 1855.

Antilope ocularis, *Peters*, *op. cit.* p. 186, 1852; *Wagner*, *op. cit.* p. 420, 1855.

Cephalophus altifrons, *Temminck*, *Esquiss. Zool. Guiné*, p. 194, 1853; *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 166, 1869.

Cephalophus ocularis, *Temminck*, *Esquiss. Zool. Guiné*, p. 194, 1853; *Kirk*, *Proc. Zool. Soc.* 1864, p. 656; *Crawshay*, *ibid.* 1890, p. 661; *Lydekker*, *Horns and Hoofs*, p. 208, 1893.

Sylvicapra ocularis, *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 168, 1869.

Grimmia ocularis, *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 132, 1887, *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 161, 1892.

Cephalophus grimmi altifrons, *Wroughton*, *Ann. Mag. Nat. Hist.* ser. 8, vol. v, p. 274, 1910; *Lydekker*, *Game Animals of Africa*, *Suppl.* p. 7, 1911.

Typical locality southern Mozambique.

Closely allied to typical race, but the coat yellowish with distinct black tips to the hairs, and the under-parts apparently white.

8. 2. 14. 16. Skin, young. Southern Rukuru, below Lake Nderendere, southern Angoniland.
Presented by C. B. C. Storey, Esq., 1908.

8. 2. 14. 15. Skin. Mpelele, near Ngara, south Angoniland. *Same history.*

8. 2. 14. 14. Skin. Rua Valley, below junction with Rusa Valley, south Angoniland. *Same history.*

7. 2. 4. 14. Skull, with horns, and skin. Nyika Plateau, Northern Angoniland. *Same donor*, 1907.

7. 6. 2. 107–8. Two skulls, with horns, and skins, immature. Beira, Portuguese E. Africa; collected by Mr. C. H. B. Grant. *Presented by C. D. Rudd, Esq.*, 1907.

8. 4. 3. 90. Skull, with horns, and skin. Tetté, Zambesia; same collector. *Same history.*

D.—Cephalophus grimmi splendidulus.

Grimmia splendidula, *Gray*, *Proc. Zool. Soc.* 1871, p. 590, *Cat. Ruminants Brit. Mus.* p. 22, 1872, *Hand-List Ruminants Brit. Mus.* p. 92, 1873.

Cephalophus grimmi splendidulus, *Wroughton*, *Ann. Mag. Nat. Hist.* ser. 8, vol. v, p. 274, 1910; *Lydekker*, *Game Animals of Africa*, *Suppl.* p. 7, 1911.

Typical locality Angola.

General colour bright reddish grey, dark streak on nose extending upwards to base of horns; under-parts white.

50. 7. 4. 1. Skull, with horns, and skin. St. Paul de Loanda. Type.

Presented by E. Gabriel, Esq. (*H.B.M. Consul*), 1850.

5. 5. 9. 83. Skull, with horns, and skin. Bingondo Bihé, Angola; collected by Dr. W. J. Ansorge.

Purchased, 1905.

E.—Cephalophus grimmi coronatus.

Antilope grimmia, *Pallas*, *Misc. Zool.* p. 12, 1766, *Spicil. Zool.* fasc. i, p. 15, 1767, xii, p. 18, 1776; *Müller*, *Natursyst.*, *Suppl.* p. 55, 1776; *Erxleben*, *Syst. Regn. Anim.* p. 276, 1777; *Zimmermann*, *Spec. Zool. Geogr.* p. 540, 1777, *Geogr. Geschichte*, p. 111, 1780; *Gatterer*, *Brev. Zool.* vol. i, p. 80, 1780; *Hermann*, *Tabl. Affin. Anim.* p. 107, 1783; *Boddaert*, *Elenchus Anim.* p. 140, 1785; *Gmelin*, *Linn.'s Syst. Nat.* vol. i, p. 191, 1785; *Schreber*, *Säugthiere*, pl. cclx, 1785; *Kerr*, *Linn.'s Anim. Kingdom*, p. 318, 1798; *Donndorff*, *Zool. Beyträge*, vol. i, p. 641, 1792; *Link*, *Beyträge Naturgesch.* vol. ii, p. 99, 1795; *Bechstein*, *Uebersicht vierfüss. Thiere*, vol. ii, p. 642, 1800; *Shaw*, *Gen. Zool.* vol. ii, pt. 2, p. 334, 1801; *Turton*, *Linn.'s Syst. Nat.* vol. i, p. 115, 1802; *Desmarest*, *Nouv. Dict. Hist. Nat.* vol. x, p. 158, 1803, vol. xxiv, p. 31, 1804; *Cuvier*, *Dict. Sci. Nat.* vol. ii, p. 240, 1804; *Illiger*, *Prodromus Syst. Nat.* p. 106, 1811; *G. Fischer*, *Zoognosia*, vol. iii, p. 424, 1814; *Afzelius*, *Nova Acta Soc. Upsal.* vol. vii, p. 220, 1815; *Goldfuss*, *Schreber's Säugthiere*, vol. v, p. 1230, 1818; *Schinz*, *Cuvier's Thierreich*, vol. i, p. 393, 1821; *Owen*, *Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii, p. 633, 1868; *Forster*, *Descrip. Anim.* p. 384, 1844; *nec* Capra grimmia *Linn.*

Antilope (Gazella) grimmia, *Lichtenstein*, *Mag. nat. Freunde*, vol. vi, p. 177, 1814.

Cerophorus (Cervicapra) grimmia, *Blainville*, *Bull. Soc. Philom.* 1816, p. 75.

Cephalophus grimmia, *Jardine*, *Naturalist's Libr.*, *Mamm.* vol. vii, p. 237, pl. xxii, 1842.

Cephalophus coronatus, *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. x, p. 266,

1842, vol. xviii, p. 164, 1846, *List Osteol. Brit. Mus.* p. 57, 1847, *Knowsley Menagerie*, p. 9, pl. vi, 1850, *Proc. Zool. Soc.* 1850, p. 122, 1871, p. 599, *Cat. Ungulata Brit. Mus.* p. 82, 1852, *Cat. Ruminants Brit. Mus.* p. 28, 1872, *Hand-List Ruminants Brit. Mus.* p. 96, 1873; *Temminck, Esquiss. Zool. Guiné*, pp. 194 and 236, 1853; *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 236, 1862; *Thomas, Proc. Zool. Soc.* 1892, p. 427; *Lydekker, Horns and Hoofs*, p. 212, 1893, *Great and Small Game of Africa*, p. 215, 1899, *Game Animals of Africa*, p. 144, 1908; *Sclater and Thomas, Book of Antelopes*, vol. i, p. 195, pl. xxii, fig. 2, 1895; *Alexander, From Niger to Nile*, vol. ii, p. 391, 1907.

Sylvicapra coronata, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 191, 1844; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 168, 1869; *Pocock, Proc. Zool. Soc.* 1910, p. 873.

Antilope (Cephalophus) coronatus, *Wagner, Schreber's Säugthiere, Suppl.* vol. iv, p. 421, 1852.

Sylvicapra grimmia, *Fitzinger, Sitzber. k. Ak. Wiss.* vol. lix, pt. 1, p. 168, 1869.

Grimmia grimmia, *Jentink, Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 138, 1887.

Typical locality Gambia.

Size smaller and ears relatively shorter than in typical race, the shoulder-height being about 17 or 18 inches; general colour light and the length of the ear about 3 inches, or less than interval between eye and tip of nose; general colour orange-yellow, with very faint speckling (grizzling), but a small dark brown nose-streak, and front and back (but not sides) of pasterns also brown, as is likewise the tail-tuft. Lachrymal depression in skull of medium depth; middle palatine notch extending considerably in advance of lateral pair. Although some of the hairs have black tips, the speckling is practically unnoticeable at a short distance.

46. 10. 26. 22. } Skull, with horns, and skin. Gambia;
45. 10. 4. 3. } collected by Mr. J. Whitfield. Type.
Presented by the Earl of Derby, 1845–6.

46. 10. 26. 23. Skull and skin, immature female. Same locality and collector. *Same donor*, 1846.

46. 10. 26. 21. Skull and skin, female. Knowsley Menagerie. *Same history.*

46. 11. 2. 5. Immature skull, female. Knowsley Menagerie. *Same history.*

46. 11. 2. 24. Skeleton. Gambia; collected by Mr. Whitfield. *Same history.*

11. 6. 10. 103. Skull, with horns, and skin. Upper Gambia. *Presented by G. Fenwick Owen, Esq.*, 1911.

11. 6. 10. 104. Skull, with horns. Same locality. *Same history.*

99. 7. 7. 2–5. Four skulls, three female. Borgu, Nigeria. *Presented by Capt. G. F. H. Abadie*, 1899.

10. 2. 17. 2. Skin, scalp separate. Beckel district. Senegal. *Presented by Capt. H. S. Toppin*, 1910.

10. 2. 17. 1. Skull, female. Gambia. *Same history.*

6. 8. 13. 1. Skin, immature. Gambia. *Presented by Capt. W. B. Stanley*, 1906.

11. 1. 25. 1. Skin, mounted, and skull. Senegambia. *Presented by Major M. McNeill*, 1911.

5. 12. 10. 3. Skull, female. Lagos. *Presented by W. A. Ross, Esq.*, 1905.

13. 8. 5. 1. Body-skin, female. Gold Coast. *Presented by Capt. C. H. Armitage*, 1913.

F.—Cephalophus grimmi campbelliæ.

Cephalophus campbelliæ, *Gray*, *List Mamm. Brit. Mus.* p. 162, 1843, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 164, 1846, *Knowsley Menagerie*, p. 9, 1850, *Proc. Zool. Soc.* 1850, p. 121, *Cat. Ungulata Brit. Mus.* p. 80, 1852; *Temminck*, *Esquiss. Zool. Guiné*, p. 194, 1853; *Gerrard*, *Cat. Bones Mamm. Brit. Mus.* p. 237, 1862.

Antilope (Cephalolophus) campbelliæ, *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. v, p. 419, 1855.

Sylvicapra campbelliæ, *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 169, 1869.

Grimmia campbelliæ, *Gray*, *Proc. Zool. Soc.* 1871, p. 589, *Cat. Ruminants Brit. Mus.* p. 23, 1872, *Hand-List Ruminants Brit. Mus.* p. 92, 1873.

Cephalophus grimmi campbelliæ, *Lydekker*, *Game Animals of Africa*, p. 143, 1908.

Sylvicapra coronata campbelliæ, *Pocock*, *Proc. Zool. Soc.* 1910, p. 873, *Field*, vol. cxxi, p. 1007, 1913.

Typical locality probably Sierra Leone.

The race has been recorded from Sokoto, Yoruba, and other parts of Nigeria.

Differs from *coronatus* by the much more profuse dark speckling of the coat, which communicates a general dusky tinge.

47, *a*. Immature skin. Sierra Leone (?); collected by A. G. Campbell, Esq. Type. *Purchased about* 1843.

G.—Cephalophus grimmi abyssinicus.

Antilope madoqua, *Rüppell, Neue Wirbelth. Abyss., Säugethiere*, p. 22, pl. vii, fig. 2, 1830; *Schinz, Synop. Mamm.* vol. ii, p. 423, 1845; *Wagner, Schreber's Säugthiere, Suppl.* vol. v, p. 422, 1855.

Tragelaphus madoqua, *Rüppell, Verzeichniss Mus. Senckenberg.* p. 37, 1842.

Sylvicapra madoqua, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 190, 1846, *Fitzinger. Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 168, 1869; *O. Neumann, Sitzber. Ges. nat. Freunde*, 1900, p. 559.

Cephalophus madoqua, *Gray, Knowsley Menagerie*, p. 9, 1850, *Proc. Zool. Soc.* 1850, p. 122, 1871, p. 598, *Cat. Ungulata Brit. Mus.* p. 82, 1852; *Temminck, Esquiss. Zool. Guiné*, p. 194, 1853; *Blanford, Zool. Abyssinia*, p. 267, 1870; *Heuglin, Reise Nord-Ostafrika*, vol. ii, p. 108, 1877, *W. L. Sclater, Cat. Mamm. Ind. Mus.* pt. ii, p. 168, 1891; *Rothschild, Powell-Cotton's Sporting Trip through Abyssinia*, p. 461, 1902.

Grimmia madoqua, *Gray, Cat. Ruminants Brit. Mus.* p. 24, 1872.

Cephalophus abyssinicus, *Thomas, Proc. Zool. Soc.* 1892, p. 427; *Lydekker, Horns and Hoofs*, p. 209, 1893; *Great and Small Game of Africa*, p. 215, 1899; *Sclater and Thomas, Book of Antelopes*, vol. i, p. 199, pl. xxii, fig. 1, 1895; *Wroughton, Ann. Mag. Nat. Hist.* ser. 8, vol. v, p. 274, 1910.

Cephalophus grimmi abyssinicus, *Lydekker, Game Animals of Africa*, p. 143, 1908; *Ward, Records of Big Game*, ed. 6, p. 162, 1910.

Sylvicapra abyssinica, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1905, p. 89; *Pocock, Proc. Zool. Soc.* 1910, p. 876; *Cabrera, Cat. Met. Mam. Mus. Madrid*, p. 122, 1912.

Typical locality Abyssinia. As already mentioned, Pocock (*loc. cit.*) is disposed to regard *abyssinicus* as not more than subspecifically from *coronatus*, leaving open the question whether the former—and therefore also the latter—should be classed as a race of *grimmi*.

Closely allied to the last; the height being 18 inches at the shoulder, the length of the ear 5½, and that of the hind-foot 8¾ inches. General colour speckled (or grizzled) yellowish grey, with the face rufous, a brown nasal mark, and the pasterns wholly dark brown.

The range extends south to the Bahr-el-Ghazal and Tana Valley.

71. 11. 29. 6. Skin mounted, and skull. Abyssinia. *Purchased*, 1871.

99. 12. 23. 2. Skull, with horns. Tana Valley, Juba-land. *Presented by H. de Prée, Esq.*, 1899.

97. 1. 5. 3. Skin. Abyssinia; from Sir Victor Brooke's collection. *Presented by Sir Douglas Brooke, Bart.*, 1897.

6. 11. 1. 55. Skull, with horns. Wochacha, North-east Africa; collected by Mr. P. Zaphiro.

Presented by W. N. McMillan, Esq., 1906.

6. 3. 27. 31. Skin, female. Haldayar.

Presented by the Lord Delamere, 1906.

4. 5. 9. 30. Skull and skin. Fafan, Somaliland.

Presented by Major H. N. Dunn, 1904.

7. 10. 2. 15. Skull, with horns, and skin. Bir-el-Girud, Bahr-el-Ghazal. *Presented by G. Blaine, Esq.*, 1907.

11. 5. 28. 4. Skull, with horns, and skin. South-west of Shambe, Bahr-el-Ghazal.

Presented by F. C. Selous, Esq., 1911.

8. 4. 2. 51. Skull, with horns, and skin. Chak-chak, Bahr-el-Ghazal. *Presented by A. L. Butler, Esq.*, 1908.

8. 4. 2. 52. Skin. Chak-chak. *Same history.*

2. 8. 16. 5. Skull, with horns, and skin, immature. Gallabat, Sudan. *Same donor*, 1902.

1. 5. 4. 8. Skull, with horns, and skin. Near cataracts, Upper Congo Valley; collected by Capt. Weyns.

Presented by the Congo Free State Museum, 1901.

7. 7. 8. 226–7. Three skulls, with horns; two immature. Shari Valley.

Presented by the Alexander-Gosling Expedition, 1907.

H.—Cephalophus grimmi nyansæ.

Sylvicapra abyssinica nyansæ, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1905, p. 89.

Cephalophus grimmi nyansæ, *Lydekker, Game Animals of Africa*, p. 143, 1908.

Typical locality Kavirondo district.

Type probably in describer's collection.

Stated by its describer to differ from *abyssinicus* merely by its darker colour, but apparently also larger.

10. 2. 13. 1. Skull and skin, female. Guasin-gishu, British East Africa. *Presented by Major Horsbrugh*, 1910.

10. 2. 14. 1. Skull, with horns, and skin. Guasin-gishu.

Presented by F. C. Selous, Esq., 1910.

1. 8. 9. 127. Skull, female. Entebbe, Uganda.
Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1901.

90. 3. 27. 7. Young, in spirit. Taita Mountains, B. E. Africa; collected by Mr. J. Wray. *Purchased*, 1890.

I.—Cephalophus grimmi hindei.

Cephalophus abyssinicus hindei, *Wroughton, Ann. Mag. Nat. Hist.* ser. 8, vol. v, p. 273, 1910; *Lönnberg, K. Svenska Vet.-Ak. Handl.* vol. xlviii, art. 5, p. 153, 1912.

Cephalophus grimmi hindei, *Lydekker, Game Animals of Africa, Suppl.* p. 7, 1911.

Typical locality Fort Hall, British East Africa.

Of the approximate size of *C. g. nyansæ*, but more brightly coloured. General colour tawny ochre, bright on neck and shoulders, duller on back and loins, but the yellow tinge noticeable even on rump, where it is wanting in *nyansæ;* hairs of neck drab-grey, with ochery tips, but further back the ochery tip is converted into a ring below the black tip; chin and inner surfaces of upper part of limbs whitish; throat ochery buff, with the hairs uniformly coloured throughout, but on flanks hairs coloured like those of back, although with the base drab. Maximum length of skull $6\frac{5}{16}$ inches (160 mm.), maximum breadth 3 inches (76 mm.); length of upper rows of cheek-teeth $2\frac{7}{16}$ inches (52 mm.).

4. 12. 6. 11. Skull, with horns, and skin, immature. Fort Hall, Kenia district, British East Africa. Type.
Presented by S. L. Hinde, Esq., 1904.

99. 3. 4. 1. Skull, with horns, and skin. Negong, Masailand. *Same donor*, 1899.

3. 5. 25. 2. Skull, with horns, and skin. Nyiri, Kenia district. *Same donor*, 1903.

3. 5. 25. 3. Skull, female. Same locality. *Same history.*

3. 11. 1. 8. Skin, female. Same locality (6,000 ft.).
Same history.

1. 8. 9. 66. Skull, with horns, and skin. Ravine Station, British East Africa.
Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1901.

10. 2. 14. 2. Skull, with horns. Raimé, British East Africa. *Presented by F. C. Selous, Esq.*

4. 11. 5. 18–22. Five skulls, one female. Nyiri.
Presented by Capt. R. Meinertzhagen, 1904.

89. 8. 3. 7. Skull, imperfect, with horns, and skin. Near Kilimanjaro. *Presented by H. C. V. Hunter, Esq.*, 1889.

J.—Cephalophus grimmi altivallis.

Sylvicapra grimmi altivallis, *Heller, Smithson. Misc. Collect.* vol. lx, No. 8, p. 10, 1912.

Typical locality Aberdare Mountains, British East Africa.

Stated to differ from *hindei* by a slight superiority in size and the darker colour of the back, which is more heavily speckled with black and less rufous; coat heavier; colour of dorsal hair broccoli-brown, and thus darker than in *hindei;* hair of under-parts drab, instead of white, at base; hoofs larger.

No example in collection.

K.—Cephalophus grimmi shirensis.

Cephalophus abyssinicus shirensis, *Wroughton, Ann. Mag. Nat. Hist.* ser. 8, vol. v, p. 274, 1910.

Cephalophus grimmi shirensis, *Lydekker, Game Animals of Africa, Suppl.* p. 7, 1911.

Typical locality Zomba, Nyasaland.

Approximately of the same size as *hindei*, but distinguished by the brighter ochery coat, of which the general colour is ochery buff; hairs drab at base, those of the neck being ochery buff to the tips, those of the back with short black tips; under-parts white, more distinctly so than in *hindei;* dark nose-mark prolonged to base of horns. Typically the speckling of the back with black so inconspicuous as to make the coat appear uniformly coloured at a short distance. This, however, is not the case with No. 96. 4. 24. 1, in which the dorsal speckling is conspicuous, while the fronts of both fore and hind legs are more heavily marked with dark brown than is the case in the type specimen.

94. 6. 7. 7. Skull, with horns, and skin. Zomba, Nyasaland (B. C. Africa). Type.
Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1894.

93. 5. 6. 6. Skull, with horns, and skin. Same locality; collected by A. White, Esq. *Same donor*, 1893.

94. 3. 7. 5. Skull, with horns, and skin. Shirwa, Nyasaland; same collector. *Same donor*, 1894.

7. 2. 23. 1. Skin. Near Fort Nilangeni, Nyasaland. *Presented by J. Rowland Ward, Esq.*, 1907.

95. 7. 22. 3–4. Two skulls, with horns. Zomba. *Presented by Sir Alfred Sharpe, K.C.M.G., C.B.*, 1895.

1. 6. 26. 8. Skull, with horns. Polombe Valley, Nyasaland; collected by Mr. G. C. S. Ray. *Presented by Lieut.-Col. Manning*, 1901.

99. 6. 28. 18–21. Four skulls, with horns and scalp-skin.

86. 3. 6. 1. Skull and skin, immature female. Gonda, east of Tanganyika; collected by Herr R. Böhm. *Purchased*, 1886.

96. 4. 24. 1. Skin, mounted. Nyasaland. *Presented by R. Crawshay, Esq.*, 1896.

92. 8. 1. 66. Head, mounted. Zomba. *Presented by Sir H. H. Johnston, G.C.M.G., K.C.B.*, 1892.

L.—Cephalophus grimmi roosevelti.

Sylvicapra grimmi roosevelti, *Heller, Smithson. Misc. Collect.* vol. lx. no. 8, p. 9, 1912.

Typical locality Lado Enclave.

Stated to be smaller and more lightly coloured than any of the other races; general colour greyish rather than yellowish, and dark areas of lower part of limbs broccoli-brown instead of blackish; dark stripe on front of fore-legs imperfectly indicated; nose-stripe extending to base of horns; under-parts white.

No example in collection.

XXXIII. CEPHALOPHUS (SYLVICAPRA) LEUCOPROSOPUS.

Cephalophus leucoprosopus, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1899, p. 18, *Sclater and Thomas, Book of Antelopes*, vol. iv, p. 225, 1900; *Thomas, Proc. Zool. Soc.* 1906, p. 464; *Lydekker, Game Animals of Africa*, p. 160, 1908.

Sylvicapra leucoprosopus, *Neumann, loc. cit.*

Typical locality believed to be Angola.

Type in Berlin Museum.

Imperfectly known; stated to be smaller than *C. g. coronatus*, with a rufous forehead, and white throat, under-parts, and inner sides of limbs; general colour brown, darker on back; legs black; tail black above, white below; rings round eyes, spot at base of ear, and insides of ears white.

This species was described from two living specimens in the Berlin Zoological Gardens, reputed to come from Angola. It has been contrasted by Thomas with *walkeri*, from which it differs by the rufous forehead and white under-parts.

No specimen in collection.

Subfamily vii.—OREOTRAGINÆ.

The single genus (and species) of small antelopes forming this group was included by Sclater and Thomas in the *Neotraginæ*, but is regarded as the type of a separate sub-family by Pocock on account of differences in foot-structure.*

Tail a mere broad stump. Muzzle with a large bare muffle and small nostrils. Face-glands normal, approximated to eyes; no foot-glands; web of pasterns not folded back on itself to form posterior wall of an interdigital cleft, but area between hoofs covered (as in *Neotraginæ*) with long hairs from the front of pastern to the back, so that there is merely a small bare patch at summit of web; hoofs truncated at tips, with their basal portion raised high above the ground in walking; inguinal glands not definitely known. Teats two. Lateral hoofs present. Horns, in the form of short spikes, generally absent in females; skull, which is very broad, with large lachrymal depressions, and small lachrymal vacuities; frontals not prolonged backwards between parietals, and horns placed above hind rims of orbits. Upper molars of medium width, without internal accessory columns. The distributional area includes the mountainous tracts of the greater part of Ethiopian Africa.

* *Rütimeyer*, *Abh. schweiz. pal. Ges.* vol. iv, p. 52, 1872, had previously used the term "*Oreotragus Gruppe*" for the *Oreotraginæ* + *Neotraginæ*.

Genus OREOTRAGUS.

Oreotragus, *A. Smith*, *S. African Quart. Journ.* vol. ii, p. 212, 1834; *Rütimeyer*, *Abh. schweiz. pal. Ges.* vol. iv, p. 52, 1877; *Sclater and Thomas*, *Book of Antelopes*, vol. ii, p. 3, 1895; *Pocock*, *Proc. Zool. Soc.* 1910, p. 885.

Oritragus, *Gloger*, *Naturgeschichte*, vol. i, p. 154, 1841.

General characters those of the subfamily.

Coat consisting of thick pithy hairs, quite different in character from those of any other African antelopes; ears of moderate size and rounded; head triangular and pointed. Distribution co-extensive with that of subfamily.

OREOTRAGUS OREOTRAGUS.

Antilope oreotragus, *Zimmermann*, *Geogr. Geschichte*, vol. iii, p. 269, 1783; *Schreber*, *Säugthiere*, pl. cclix, 1785; *Gmelin*, *Linn.'s Syst. Nat.* vol. i, p. 189, 1788; *Kerr*, *Linn.'s Anim. Kingdom*, p. 316, 1792; *Donndorff*, *Zool. Beyträge*, vol. i, p. 637, 1792; *Link*, *Beyträge Natgesch.* vol. ii, p. 99, 1795; *Bechstein*, *Uebersicht vierfüss. Thiere*, vol. i, p. 74, 1799, vol. ii, p. 642, 1800; *Shaw*, *Gen. Zool.* vol. ii, pt. 2, p. 321, 1801; *Turton*, *Linn.'s Syst. Nat.* vol. i, p. 114, 1802; *Desmarest*, *Nouv. Dict. Hist. Nat.* vol. xvi, p. 328, 1803, ed. 2, vol. ii, p. 191, 1816, *Mammalogie*, vol. ii, p. 460, 1822, *Dict. Class. Hist. Nat.* vol. i, p. 445, 1822; *Cuvier*, *Dict. Sci. Nat.* vol. ii, p. 233, 1804; *Tiedemann*, *Zool.* vol. i, p. 408, 1808; *Thunberg*, *Mém. Ac. Sci. St. Pétersb.* vol. iii, p. 311, 1801; *Afzelius*, *Nova Acta Soc. Upsal.* vol. vii, p. 219, 1815; *Goldfuss. Schreber's Säugthiere*, *Suppl.* vol. v, p. 1228, 1818; *Schinz*, *Cuvier's Theirreich*, vol. i, p. 392, 1821, *Synop. Mamm.* vol. ii, p. 410, 1845; *Burchell*, *List Mamm. presented to Brit. Mus.* p. 6, 1825; *Lichtenstein*, *Darstellung. Säugethiere*, pl. xv, 1828; *J. B. Fischer*, *Synop. Mamm.* p. 466, 1829; *Rüppell*, *Neue Wirbelth. Abyssin.*, *Mamm.* p. 25, 1835; *Lesson*, *Hist. Nat. Anim.* vol. x, p. 291, 1836; *Owen*, *Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii, p. 633, 1868; *Waterhouse*, *Cat. Mamm. Mus. Zool. Soc.* p. 42, 1838; *Oken*, *Allgemeine Naturgeschichte*, vol. vii, p. 1363, 1838; *Gervais*, *Dict. Sci. Nat.*, *Suppl.* vol. i, p. 262, 1840; *Forster*, *Descript. Anim.* p. 382, 1844; *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. iv, p. 436, 1844, vol. v, p. 412, 1855; *Giebel*, *Säugethiere*, p. 318, 1855.

Antilope saltatrix, *Boddaert*, *Elenchus Anim.* p. 141, 1785; *Link*, *Beyträge Naturgesch.* vol. ii, p. 99, 1795; *Lesson*, *Man. Mamm.* p. 377, 1827; *Nouv. Tabl. Règn. Anim.*, *Mamm.* p. 177, 1842; *Des Murs and Prévost*, *Lefebvrès Voyage Abyss.* vol. vi, *Zool.* p. 32, pl. iv, 1827; *Huet*, *Bull. Soc. Acclim.* ser. 4, vol. iv, p. 233, 1887.

Antilope klippspringer, *Desmarest*, *Nouv. Dict. Hist. Nat.* vol. xii, p. 390, vol. xxiv, p. 32, 1804.

Antilope (Gazella) oreotragus, *Lichtenstein*, *Mag. nat. Freunde*, vol. vi, p. 175, 1814.

Cemas oreotragus, *Oken*, *Lehrbuch Naturgeschichte*, vol. iii, pt. 2, p. 743, 1816.

Cerophorus (Cervicapra) oreotragus, *Blainville*, *Bull. Soc. Philom.* 1816, p. 75.

Antilope (Tragulus) oreotragus, *H. Smith*, *Griffith's Animal Kingdom*, vol. iv, p. 245, vol. v, p. 340, 1827; *Smuts*, *Enum. Mamm. Cap.* p. 79, 1832.

Oreotragus typicus, *A. Smith*, *S. African Quart. Journ.* vol. ii, p. 212, 1834.

Antilope (Ourebia) oreotragus, *Laurillard*, *Dict. Univ. Hist. Nat.* vol. i, p. 622, 1841.

Tragelaphus oreotragus, *Rüppell*, *Verzeichniss Mus. Senckenberg.* pt. 1, p. 37, 1842.

Oreotragus saltatrix, *Jardine*, *Naturalists' Libr.*, *Mamm.* vol. vii, p. 221, pl. xxx, 1842; *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 236, 1846, ser. 2, vol. viii, p. 137, 1851, *Knowsley Menagerie*, p. 8, 1850, *Proc. Zool. Soc.* 1850, p. 119, *Cat. Ungulata Brit. Mus.* p. 74, 1852, *Cat. Ruminants Brit. Mus.* p. 20, 1872, *Hand-List Ruminants Brit. Mus.* p. 90, 1873; *Gerrard*, *Cat. Bones Mamm. Brit. Mus.* p. 235, 1862, *Blyth*, *Cat. Mamm. Mus. Asiat. Soc. Bengal*, p. 167, 1863, *Heuglin*, *Nova Acta Ac. Cæs. Leop.—Car.* vol. xxx, pt. 2, p. 9, 1863, *Reise Nordost Afrika*, vol. ii, p. 104, 1877; *Fitzinger*, *Sitzber. k. Ak. Wiss Wien*, vol. lix, pt. 1, p. 170, 1869; *Blanford*, *Zool. Abyssinia*, p. 265, 1870; *Drummond*, *Large Game*, *of South Africa*, pp. 396 and 425, 1875; *Rütimeyer*, *Abh. schweiz. pal. Ges.* vol. iv, p. 53, 1877; *Brehm*, *Thierleben*, *Säugethiere*, vol. iii, p. 262, 1880; *Giglioli*, *Ann. Mus. Genova*, ser. 2, vol. vi, p. 18, 1888; *Bryden*, *Kloof and Karroo*, p. 300, 1889.

Calotragus saltatrix, *Temminck*, *Esquiss. Zool. Guiné*, p. 191, 1853.

Calotragus oreotragus, *Rüppell*, *op. cit.* 1855.

Antilope saltatrixoides, *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. v, p. 412, 1855.

Oreotragus saltator, *Kirk*, *Proc. Zool. Soc.* 1864, p. 657; *Crawshay*, *ibid*, 1890, p. 653; *Thomas*, *ibid.* 1891, p. 211, 1892, p. 553, 1894, p. 145; *Swayne*, *ibid.* 1892, p. 308; *Nicolls and Eglington*, *Sportsman in S. Africa*, p. 26, 1892; *Rendall*, *Proc. Zool. Soc.* 1895, p. 361; *Sclater and Thomas*, *Book of Antelopes*, vol. ii, p. 5, pl. xxv, 1895; *Lydekker*, *Great and Small Game of Africa*, p. 234, 1899; *Game Animals of Africa*, p. 166, 1908; *W. L. Sclater*, *Fauna of S. Africa*, *Mamm.* vol. i, p. 167, 1900; *Ward*, *Records of Big Game*, ed. 6, p. 188, 1910; *Letcher*, *Big Game N.E. Rhodesia*, p. 188, 1911.

Nanotragus oreotragus, *Brooke*, *Proc. Zool. Soc.* 1872, p. 642; *Buckley*, *ibid.* 1876, p. 283; *Selous*, *ibid*, 1881, p. 762, *A Hunter's Wanderings in S. Africa*, p. 222, 1881; *W. L. Sclater*, *Cat. Mamm. Ind. Mus.* pt. ii, p. 167, 1891; *Flower and Lydekker*, *Study of Mammals*, p. 329, 1891, *Lydekker*, *Horns and Hoofs*, p. 219, 1893.

Oreotragus oreotragus, *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 131, 1887, *Cat. Mamm. Leyden Mus.* (*ibid.* vol. xi)

p. 160, 1892; *O. Neumann, Sitzber. Ges. nat. Freunde*, 1900, p. 559; *Matschie, Säugethiere Deutsch-Ostafrika*, p. 122, 1895; *Thomas, Proc. Zool. Soc.* 1900, p. 803; *Rothschild, Powell-Cotton's Sporting Trip through Abyssinia*, p. 466, 1902; *Anderson and de Winton, Zool. Egypt, Mamm.* p. 338, pl. lix, 1902; *Thomas and Schwann, Proc. Zool. Soc.* 1904, vol. i, p. 183; *Pocock, ibid.* 1910, p. 885.

KLIPSPRINGER.

Type of genus and of *Oritragus*.

Typical locality Cape Colony.

Height at shoulder ranging from about 20 to 22 inches; general colour speckled yellow and black, giving an olive tone to the whole coat, except where the orange-yellow is specially prevalent; coat wavy, close-lying, and thick so as to form a kind of cushion-like covering; the individual hairs white to pale grey at base, yellow at tip, and brown in the intermediate portion; under-parts, inclusive of chin, and inner sides of limbs paler than back, frequently white; limbs coloured like body. Basal length of skull $4\frac{3}{8}$ inches, maximum width $3\frac{1}{8}$, length from muzzle to orbit $2\frac{3}{8}$ inches.

Distribution the same as that of the genus. Includes Angola and Northern Nigeria on the west coast.

The local races may be distinguished as follows:—

A. Females normally hornless.
 a. Under-parts coloured like back but paler; no black patch above front of hoofs or white spot on outer side of ears *O. o. oreotragus.*
 b. Under-parts white; a black patch above front of hoofs and a white spot on outer side of ears.
 a'. Body uniformly coloured throughout.
 a''. Base of hairs, especially on back, white or whitish.
 a'''. Colour darker, limbs not markedly lighter than body, crown of head coloured much like body *O. o. saltatrixoides.*
 b'''. Colour lighter (golden yellow), legs much paler than body; crown of head different in colour from body *O. o. aureus.*
 b''. Base of hairs, especially on back, reddish grey or reddish brown *O. o. somalicus.*
 b'. Fore and hind halves of body differently coloured; the former reddish or yellowish ochery, the latter olive (roe-colour) *O. o. aceratos.*
 c. Imperfectly known; skull relatively broad... *O. o. porteousi.*
B. Females frequently horned *O. o. schillingsi.*

A.—Oreotragus oreotragus oreotragus.

Oreotragus oreotragus, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1902, p. 170.

Oreotragus saltator typicus, *Lydekker, Game Animals of Africa*, p. 167, 1908.

Typical locality Cape Colony.

General colour uniform brownish olive, with the under-parts only slightly paler than back; base of hairs on back brownish white, tips frequently yellow; no distinct black patch on front of feet above hoofs; ears, which are relatively short, mingled black and yellowish, with a reddish white band below and a black one above, and an indistinct yellowish spot on the outer side, inside white; forehead and occiput reddish brown; chin and throat light yellowish.

The northern limit of the range is not definitely known, but probably does not extend beyond the Zambesi.

51. 6. 4. 1. Skull, with horns. Cape Colony; collected by Verreaux. *Purchased*, 1851.

96. 2. 27. 1. Skin, mounted, female. Rhenosterberg, Middelberg, Cape Colony.

Presented by H. Laing Gordon, Esq., 1896.

4. 2. 3. 122. Skull, with horns, and skin. Klipfontein, Namaqualand; collected by Mr. C. H. B. Grant.

Presented by C. D. Rudd, Esq., 1904.

B.—Oreotragus oreotragus saltatrixoides.

Calotragus saltatrixoides, *Temminck, Esquiss. Zool. Guiné*, p. 191, 1853; *Rüppell, Wagner, Schreber's Säugthiere, Suppl.* vol. v, p. 414, 1855.

Oreotragus saltatrixoides, *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 170, 1869; *O. Neumann, Sitzber. Ges. nat. Freunde*, 1902, p. 171.

Oreotragus saltator saltatrixoides, *Lydekker, Game Animals of Africa*, p. 167, 1908.

Typical locality Abyssinia.

General colour uniform greyish olive above, with white or whitish bases to the hairs, especially on back; thighs only a little lighter than back; under-parts white; a white spot on outer side of ear; and a black patch on front of feet above hoofs.

The distributional area comprises the mountainous districts of north-eastern Africa, exclusive of Somaliland; also Abyssinia, from Erythræa to the Hawash Valley, and thence eastward to Harar; while it may also include the country between the Hawash Valley and Lake Rudolf.

73. 2. 24. 15. Skull, with horns, and skin. Bogosland, Abyssinia. *Purchased*, 1873.

73. 2. 24. 14. Skin, female. Same locality. *Same history.*

73. 2. 24. 21. Skull, with horns. Same locality. *Same history.*

44. 5. 14. 37. Skull, with horns, and skin. Abyssinia. *Purchased*, 1847.

C.—Oreotragus oreotragus aureus.

Oreotragus oreotragus aureus, *Heller*, *Smithson. Misc. Collect.* vol. lxi, no. 13, p. 7, 1913.

Typical locality Mt. Lololohwi, north of Guaso-nyiro, B. E. Africa.

Type in U. S. National Museum.

Provisionally recognised as a race, diagnosed as follows:—General colour golden yellow, lighter than in *saltatrixoides;* limbs much paler than body; hoof-spot large; crown of head rufous, in marked contrast to body-colour.

13. 10 9. 1–3. Three skulls and skins, female, Guaso-narok, northern Guaso-nyiro. The difference in colour between the body and legs is very slight, but the rufous crown is well-marked.

Presented by F. Russell Roberts, Esq., 1913.

D.—Oreotragus oreotragus schillingsi.

Oreotragus schillingsi, *O. Neumann*, *Sitzber. Ges. nat. Freunde*, 1902, p. 172; *Roosevelt*, *African Game Trails*, p. 487, 1910.

Oreotragus saltator schillingsi, *Lydekker*, *Game Animals of Africa*, p. 167, 1908, *Suppl.* p. 9, 1911.

Oreotragus oreotragus schillingsi, *Hollister*, *Smithson. Misc. Collect.* vol. lvi, no. 2, p. 3, 1910.

Typical locality northern German East Africa.

Type apparently in the collection of Mr. C. G. Schillings.

In general characters very similar to *saltatrixoides*, but distinguished by the thighs, which are clear grey or rufous, differing markedly in colour from the body, and the dark middle line of the back, as well as by the very general presence of horns in the female; the last character distinguishing this race from all the others.

The range includes all the district round Kilimanjaro, and the neighbourhood of the Amara River, British East Africa, about a dozen miles from the German border, and thence to Laikipia and Uganda.

5. 4. 3. 29. Skull and skin, female. South-western Ankoli, Uganda; collected by Mr. W. G. Doggett.

Presented by Lieut.-Col. C. Delmé-Radcliffe, 1905.

5. 4. 3. 30. Skin, female. Same locality. *Same history.*

5. 4. 3. 31. Skeleton. Same locality. *Same history.*

3. 11. 7. 19. Skull (imperfect) and skin, immature. Bulima, Uganda. *Same donor*, 1903.

8. 3. 14. 2. Skin. Laikipia, British East Africa.

Presented by Capt. the Hon. H. C. Guest, 1908.

11. 3. 12. 1. Head, mounted, and body-skin, female. Amara Valley, southern Guaso-nyiro, British East Africa.

Presented by Capt. W. H. Wilkin, 1911.

10. 3. 17. 2. Skull, with horns, and skin. Laretai Plains, British East Africa.

Presented by Lieut.-Col. Stevenson Clarke, 1910.

10. 3. 17. 3. Skin. Same locality. *Same history.*

10. 3. 17. 4. Skull, with horns. Honeybird Valley, fifty miles south-west of Kijabe, British East Africa.

Same history.

E.—Oreotragus oreotragus somalicus.

Oreotragus somalicus, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1902, p. 174; *Drake-Brockman, Mammals of Somali.* p. 63, 1910.

Oreotragus saltator somalicus, *Lydekker, Game Animals of Africa*, p. 167, 1908.

Typical locality Somaliland.

Differs from two preceding races by the bases of the hairs, especially on the back, being reddish grey or reddish brown; females hornless.

The coloured plate in the *Book of Antelopes* represents this race.

94. 2. 21. 21. Skull, with horns. Somaliland; collected by Col. H. G. C. Swayne.

Presented by Dr. P. L. Sclater, 1894.

98. 3. 12. 1. Skull and skin, female. Golis Range, Somaliland. Type.

Presented by F. B. Parkinson, Esq., 1898.

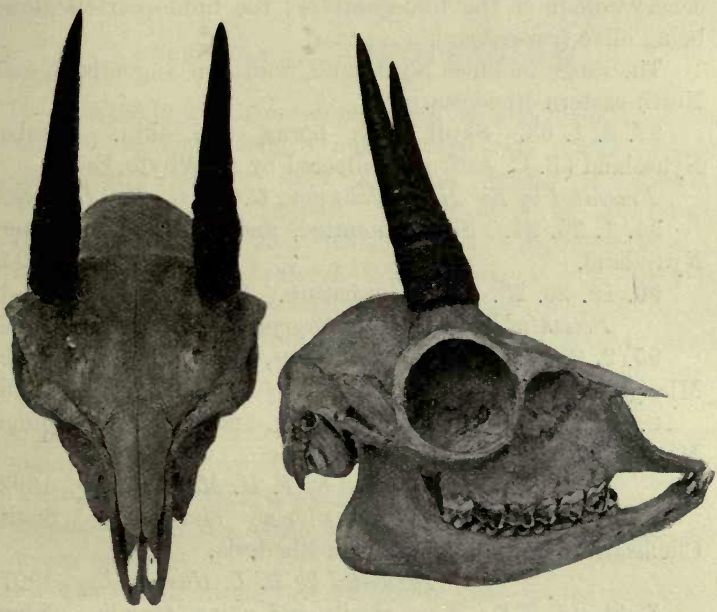


FIG. 12.—FRONT AND SIDE VIEWS OF SKULL OF SOMALI KLIPSPRINGER (*Oreotragus oreotragus somalicus*).

10. 10. 3. 46. Skin, female. Same locality.

Presented by Dr. R. E. Drake-Brockman, 1910.

10. 10. 3. 45. Skin. Shanahalsh, Golis Range.

Same history.

6. 11. 1. 57. Skull, with horns (fig. 12), and skin. Managaiki Hills, North-eastern Africa; collected by Mr. Zaphiro. *Presented by W. N. McMillan, Esq.*, 1906.

12. 7. 10. 7. Skin. Debrowein, Somaliland.

Presented by G. Blaine, Esq., 1912.

F.—Oreotragus oreotragus aceratos.

Oreotragus aceratos, *Noack*, *Zool. Anz.* 1899, p. 11; *O. Neumann*, *Sitzber. Ges. nat. Freunde*, 1902, p. 173.

Oreotragus saltator aceratos, *Lydekker*, *Game Animals of Africa*, p. 167, 1908.

Typical locality Lindi Hinterland, East Africa.

Distinguished from all the other races by the reddish or ochery colour of the fore-quarters; the hind-quarters alone being olive (roe-colour).

The range includes Nyasaland, Southern Angoniland, and North-eastern Rhodesia.

92. 8. 1. 63. Skull, with horns, and skin. Zomba, Nyasaland (B. C. Africa); collected by A. Whyte, Esq.

Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1892.

94. 1. 25. 21. Skin, mounted, and skull. Fort Lister, Nyasaland. *Same donor*, 1894.

96. 10. 26. 23. Skin, immature. Southern Angoniland. *Presented by Sir Alfred Sharpe, K.C.M.G., C.B.*, 1896.

95. 2. 2. 17. Skull, with horns, and skin, immature. Mlange, Nyasaland. *Same donor*, 1895.

2. 8. 12. 1. Skull, with horns, and skin. Muchinga Mountains, North-eastern Rhodesia. *Presented by F. H. Melland, Esq.*, 1902.

7. 11. 15. 6. Skull, with horns, and skin. South Chemsali district, North-eastern Rhodesia. *Presented by R. L. Harger, Esq.*, 1907.

7. 11. 15. 7–8. Two skulls and skins, female. Same locality. *Same history.*

7. 11. 15. 9. Skin. Same locality. *Same history.*

G.—Oreotragus oreotragus porteousi.

Oreotragus saltator porteusi, *Lydekker*, *Proc. Zool. Soc.* 1911, p. 960, *Game Animals of Africa*, *Suppl.* p. 9, 1911; name misspelt.

Typical locality Zaria * district of Northern Nigeria.

Imperfectly known. Skull differs from that of *schillingsi* by its much greater width, the diameter across the orbits being $3\frac{1}{4}$ against $2\frac{15}{16}$ inches; it is further distinguished by the

* Incorrectly given as Yola in original description.

marked bending-down of the margin of the lachrymal bone, which consequently has a distinct lateral surface in place of a sharp edge, and also shows only a comparatively small portion of its whole extent in a front view of the skull.

12. 5. 3. 1. Skull, with horns. Duchi n'Wai Range, Zaria, Northern Nigeria. Type.

Presented by Dr. E. J. Porteous, 1911.

Subfamily viii.—NEOTRAGINÆ.

Relatively small antelopes, with well-developed slender tails of moderate length, and a large bare muffle extending nearly as far back as hind angles of nostrils. Face-glands, when present, in the form of a valvular invagination, with their circular orifices approximated to the eyes; web of pasterns folded back on itself to form posterior wall of an interdigital cleft; other characters of this part as in *Oreotraginæ;* hoofs normal; inguinal glands apparently present. Teats two* or four.† Lateral hoofs present or absent. Horns absent in females, except abnormally; those of males in the form of short simple spikes, more or less annulated at base; skull more or less elongated, with large lachrymal depressions and small lachrymal slits; frontals much the same as in *Oreotraginæ,* as are also the upper molars.

The distributional area includes the greater portion of Ethiopian Africa. The following is a key to the genera included in the subfamily:—

A. A bare patch below ear *Ourebia.*

B. No bare patch below ear.

a. Horns vertical; lateral hoofs present or absent... *Raphicerus.*

b. Horns inclining backwards in or near frontal plane; lateral hoofs wanting *Neotragus.*

* W. L. Sclater, *Fauna S. Africa, Mamm.* vol. i, p. 174, *Raphicerus.*

† Pocock, *Proc. Zool. Soc.* 1910, p. 882, *Ourebia.*

I. Genus OUREBIA.

Ourebia, *Laurillard, Dict. Univ. Hist. Nat.* vol. i, p. 622, 1841*; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 13, 1895; *Pocock, Proc. Zool. Soc.* 1910, p. 882.

Scopophorus, *Gray, Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 232, 1846.

Oribia, *Lydekker, Great and Small Game of Africa*, p. 238, 1899.

The largest members of the subfamily, readily distinguished by the presence of a larger or smaller bare patch of skin (commonly described as glandular) below each ear, tufts of long hairs on the knees, and the retention of small lateral hoofs. Tail short and tufted. Skull with large or medium lachrymal depressions; nasals large. Horns inclining backwards, and ridged at base.

The genus is distributed, in suitable localities, over the greater part of Ethiopian Africa, where it is represented by several more or closely allied species, some of which might perhaps be better regarded as local races. To these the following is a key :—

A. A blackish frontal mark.
 a. Size smaller; basal skull-length 5¾ inches... *O. ourebi.*
 b. Size larger; basal skull length $6\frac{5}{16}$ *O. goslingi.*

B. No dark frontal mark.
 a. Horns more or less slender; hair straight.
 a'. Tail largely black.
 a''. Nose blackish; size small *O. nigricaudata.*
 b''. Nose fawn; size larger.
 a^3. Lachrymal depression broad *O. hastata.*
 b^3. Lachrymal depression narrow.
 a^4. Skull small; teeth large *O. kenyæ.*
 b^4. Skull large; teeth small *O. microdon.*†
 b'. Tail fawn, except for a few hairs at tip.
 a'. Horns long and slender; tail short ... *O. cottoni.*
 b'. Horns short and slight; tail longer ... *O. montana.*
 b. Horns very thick and heavily ridged *O. haggardi.*
 c. Hair curly *O. gallarum.*

* For date of this work see *Ann. Mag. Nat. Hist.* ser. 7, vol. vii, p. 350, 1899.

† External characters unknown.

I. OUREBIA OUREBI.

Antilope ourebi, *Zimmermann, Geogr. Geschichte*, vol. iii, p. 266, 1783; *Shaw, Gen. Zool.* vol. ii, pt. 2, p. 320, 1801; *Huet, Bull. Soc. Acclim.* ser. 4, vol. iv, p. 89, 1887.

Antilope scoparia, *Schreber, Säugthiere*, pl. cclxi, 1785; *Afzelius Nova Acta Soc. Upsal.* vol. vii, p. 220, 1815; *Desmarest, Nouv. Dict. Hist. Nat.* vol. ii, p. 194, 1816, *Mamm.* vol. ii, p. 462, 1822; *Desmoulins, Dict. Class. Hist. Nat.* vol. i, p. 446, 1822; *Goldfuss, Schreber's Säugthiere*, vol. v, p. 1244, 1824; *Burchell, List Quadr. presented to Brit. Mus.* p. 7, 1825; *H. Smith, Griffith's Animal Kingdom*, vol. iv, p. 244, vol. v, p. 339, 1827; *Lesson, Man. Mamm.* p. 379, 1827, *Hist. Nat. Anim.* vol. x, p. 290, 1836, *Nouv. Tabl. Règne Anim., Mamm.* p. 177, 1842; *Lichtenstein, Darstellung. Säugeth.* pl. xii, 1828; *J. B. Fischer, Synop. Mamm.* p. 469, 1829; *Smuts, Enum. Mamm. Cap.* p. 78, 1832; *Owen, Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, p. 633, 1868; *Oken, Allgemeine Naturgesch.* vol. vii, p. 1362, 1838; *Gervais, Dict. Sci. Nat., Suppl.* vol. i, p. 262, 1840; *Wagner, Schreber's Säugthiere, Suppl.* vol. iv, p. 429, 1844, vol. v, p. 411, 1855; *Schinz, Synop. Mamm.* vol. ii, p. 414, 1845; *Giebel, Säugethiere*, p. 316, 1855.

Antilope melanura, *Bechstein, Uebersicht vierfüss. Thiere*, vol. i, p. 73, 1799, vol. ii, p. 642, 1800.

Cemas melanura, *Oken, Lehrbuch Naturgeschichte*, vol. iii, pt. 2, p. 743, 1816.

Redunca scoparia, *A. Smith, S. African Quart. Journ.* vol. ii, p. 211, 1834.

Antilope (Ourebia) scoparia, *Laurillard, Dict. Univ. Hist. Nat.* vol. i, p. 623, 1841.

Oreotragus scoparius, *Gray, List Mamm. Brit. Mus.* p. 164, 1843, *List Osteol. Brit. Mus.* p. 146, 1847; *Drummond, Large Game S. Africa*, p. 426, 1875.

Calotragus scoparius, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 192, 1846; *Brehm, Thierleben, Säugethiere*, vol. iii, p. 260, 1880, ed. 3, p. 396, 1891.

Scopophorus ourebi, *Gray, Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 232, 1846, ser. 2, vol. viii, p. 131, 1851, *Knowsley Menagerie*, p. 7, 1850, *Proc. Zool. Soc.* 1850, p. 118, *Cat. Ungulata Brit. Mus.* p. 73, 1852, *Cat. Ruminants Brit. Mus.* p. 19, 1872, *Hand-List Ruminants Brit. Mus.* p. 90, 1873; *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 236, 1862; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 165, 1869.

Calotragus oureby, *Temminck, Esquiss. Zool. Guiné*, p. 191, 1853.

Scopophorus ourebi grayi, *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 165, 1869.

Nanotragus scoparius, *Brooke, Proc. Zool. Soc.* 1872, p. 642; *Selous, ibid.* 1881, p. 761, *A Hunter's Wanderings in S. Africa*, p. 221, 1881; *Bryden, Kloof and Karroo*, p. 301, 1889; *Flower and Lydekker, Study of Mammals*, p. 339, 1891; *Nicolls and Eglington, Sportsman in S. Africa*, p. 25, 1892; *Ward, Records of Big Game*, p. 81, 1892; *Lydekker, Horns and Hoofs*, p. 218, 1893.

Scopophorus scoparius, *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 131, 1887, *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 160, 1892.

Neotragus scoparius, *Barkley*, *Proc. Zool. Soc.* 1894, p. 132; *Rendall*, *ibid.* 1895, p. 361.

Ourebia scoparia, *Sclater and Thomas*, *Book of Antelopes*, vol. ii, p. 15, 1895; *W. L. Sclater*, *Fauna S. Africa*, *Mamm.* vol. i, p. 170, 1900.

Oribia scoparia, *Lydekker*, *Great and Small Game of Africa*, p. 238, 1899, *Game Animals of Africa*, p. 169, 1908; *Kirby*, *Great and Small Game of Africa*, p. 239, 1899; *Ward*, *Records of Big Game*, ed. 6, p. 176, 1910; *Letcher*, *Big Game N.E. Rhodesia*, p. 196, 1911.

Ourebia ourebi, quoted by *Lydekker*, *Game Animals of Africa*, p. 169, note, 1908*; *Pocock*, *Proc. Zool. Soc.* 1910, p. 882.

Ourebia oribi, *Thomas and Wroughton*, *Ann. Mag. Nat. Hist.* ser. 7, vol. xix, p. 387, 1907.

ORIBI.

Type of genus; also of *Scopophorus*.

Typical locality Cape Colony.

Size large; height at shoulder from about 24 to 26 inches. General colour bright sandy rufous; chin, a stripe over outer angle of each eye, and under-parts (exclusive of throat) white; generally a dark brown triangular mark on forehead; subauricular bare patch small and indistinct; tail sandy rufous in its basal third, elsewhere thickly tufted and black, length about $4\frac{1}{2}$ inches; skull with large slender muzzle, and large and open lachrymal depressions, of which the upper and lower borders are strongly ridged. Horns, of which fine specimens measure from 5 to 7 inches in length, slender, evenly tapering, inclined backwards at an angle of about 45° to the plane of the face, with a slight upward and forward curvature; their ridges approximated, low, rounded, indistinct, and restricted to the basal two-thirds. Length of hind-foot 11, of ear $3\frac{3}{4}$ inches; basal length of skull $5\frac{1}{4}$, maximum width $2\frac{7}{8}$, length from muzzle to orbit $3\frac{5}{8}$ inches.

The range appears to extend as far north as the Zambesi on the east, and into Congo territory on the west.

46. 10. 26. 18. Skull and skin, female. South Africa. *Purchased*, 1846.

46. 10. 26. 17. } Skull and skin, female. South Africa.
46. 1. 9. 13. } *Purchased*, 1846.

* There is some earlier reference.

775, *h.* } Skull and skin, female. Mashonaland.
135, *b.* } *By exchange with the South African Museum.*

1. 6. 3. 86. Skull, with horns. Mashonaland. *Presented by F. C. Selous, Esq.*, 1901.

97. 8. 25. 4. Skull, with horns, immature. South-east Africa. *Presented by J. ffolliott Darling, Esq.*, 1897.

97. 8. 25. 4. Head, mounted. Mount Fletcher, Griqualand East. *Same history.*

8. 4. 15. 1. Head, mounted. Barotsiland. *Presented by S. F. Griffin, Esq.*, 1908.

12. 1. 1. 1–3. Three frontlets, with horns. Mazabreka, North-west Rhodesia. *Presented by R. C. Wood, Esq.*, 1912.

12. 3. 27. 1, 2. Two skulls, male, with horns, and immature female. Same locality. *Same history.*

10. 2. 16. 5. Skull, with horns. Nsele, Awemba, North-east Rhodesia. *Presented by F. H. Melland, Esq.*, 1910.

12. 5. 10. 2. Skull, with horns, and skin. Luapula Valley, Belgian Congo. *Presented by Col. C. F. Blaine*, 1912.

II. OUREBIA HASTATA.

Antilope hastata, *Peters*, *Reise Mossambique*, *Säugeth.* p. 188, pl. xli, fig. 2; *Giebel*, *Säugethiere*, p. 317, 1855; *Wagner*, *Schreber's Säugthière*, *Suppl.* vol. v, p. 411, 1855; *Huet*, *Bull. Soc. Acclim.* 1887, p. 46.

Calotragus hastata, *Temminck*, *Esquiss. Zool. Guiné*, p. 191, 1853.

Scopophorus hastatus, *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 165, 1869; *Matschie*, *Säugeth. Deutsch-Ostafrika*, p. 121, 1895.

Nanotragus hastatus, *Brooke*, *Proc. Zool. Soc.* 1874, p. 642; *Flower and Lydekker*, *Study of Mammals*, p. 339, 1892; *Lydekker*, *Horns and Hoofs*, p. 219, 1893.

Oreotragus hastatus, *Rütimeyer*, *Abh. schweiz. pal. Ges.* vol. iv, p. 53, 1877.

Ourebia hastata, *Sclater and Thomas*, *Book of Antelopes*, vol. ii, p. 21, 1895; *Thomas and Wroughton*, *Ann. Mag. Nat. Hist.* ser. 7, vol. xix, p. 387, 1907.

Oribia hastata, *Lydekker*, *Great and Small Game of Africa*, p. 239, 1899, *Game Animals of Africa*, p. 171, 1908.

Typical locality Senna, Zambesia.

Nearly related to *O. ourebi*, but with a larger and more conspicuous ear-patch, a more slender and less heavily tufted tail, with more or less white along the inferior lateral edges,

and no dark mark on crown of head. These differences scarcely seem of more than racial value. The range extends from Mozambique to Nyasaland.

93. 5. 6. 5. Skull, with horns, and skin. Zomba, Nyasaland; collected by A. Whyte, Esq.

Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1893.



FIG. 13.—FRONT AND SIDE VIEWS OF SKULL AND HORNS OF PETERS'S ORIBI (*Ourebia hastata*).

94. 3. 7. 4. Skin, mounted, and skull. Shirwa Plain, Nyasaland; same collector. *Same donor*, 1894.

96. 10. 28. 21. Skull and skin, female. South of Lake Shirwa, Nyasaland; same collector. *Same donor*, 1896.

97. 10. 1. 264. Skull, with horns (fig. 13), and skin. Zomba. *Same donor*, 1897.

99. 6. 29. 9. Skull, with horns, and skin. Zomba.

Presented by Sir Alfred Sharpe, K.C.M.G., C.B., 1899.

III. OUREBIA NIGRICAUDATA.

Scopophorus montanus, *Gray*, *Knowsley Menagerie*, p. 7, pl. v, 1850, nec *Cretzschmar*.

Nanotragus nigricaudatus, *Brooke*, *Proc. Zool. Soc.* 1872, p. 874, pl. lxxv; *Garrod*, *ibid.* 1877, p. 11; *Ward*, *Records of Big Game*, p. 81, 1892; *Lydekker*, *Horns and Hoofs*, p. 219, 1893.

Neotragus nigricaudatus, *Sclater*, *List Anim. Zool. Gardens*, p. 145, 1883.

Ourebia nigricaudata, *Sclater and Thomas*, *Book of Antelopes*, vol. ii, p. 23, 1895; *Alexander*, *From Niger to Nile*, vol. ii, p. 392, 1907; *Pocock*, *Proc. Zool. Soc.* 1910, p. 882.

Oribia nigricaudata, *Lydekker*, *Great and Small Game of Africa*, p. 239, 1899, *Game Animals of Africa*, p. 171, 1908; *Ward*, *Records of Big Game*, ed. 6, p. 180, 1910.

Typical locality Gambia.

Size relatively small; height at shoulder about 21 inches. General colour greyish fawn; ear-patch large; upper surface of nose dusky; tail with a large terminal tuft. Length of hind-foot 10, of ear $3\frac{3}{8}$ inches. There may be a triangular blackish patch behind the horns.

The range includes the open districts of Gambia and Senegambia.

76. 2. 30. 3. Skeleton, with horns, and skin. Gambia; collected by C. B. More, Esq. Type.
Purchased (*Zoological Society*), 1876.

76. 2. 4. 2. Skin, female. West Africa.
Presented by the Zoological Society, 1876.

99. 6. 15. 15. Skull and skin, female. Gambaga.
Presented by Capt. W. Giffard, 1899.

10. 2. 17. 1. Head-skin, immature female. Bekel District, Senegal. *Presented by Capt. H. S. Topping*, 1910.

10. 2. 17. 2. Skull, with horns, immature. Same locality.
Same history.

11. 6. 10. 106. Skin. Upper Gambia.
Presented by G. Fenwick Owen, Esq., 1911.

8. 12. 18. 3. Skin, mounted. Senegambia.
Presented by F. Russell Roberts, Esq., 1908.

51. 12. 2. 6. Skull and skin, female. West Africa.
Purchased (*Zoological Society*), 1851.

5. 5. 10. 13. Skin. Wasé, Northern Nigeria.
Presented by Dr. H. K. W. Kumm, 1905.

99. 7. 7. 6. Skull, with horns, immature. Borgu, Nigeria. *Presented by Capt. G. H. F. Abadie*, 1899.

99. 7. 7. 7. Skull, female. Same locality. *Same history.*

IV. OUREBIA MONTANA.

Antilope montana, *Cretzschmar, Atlas to Rüppell's Reise Nordost-Afrika*, p. 11, pl. iii, 1826; *Fischer, Synop. Mamm.* p. 469, 1829; *Rüppell, Neue Wirbelth. Abyssin., Mamm.* p. 25, 1835, *Proc. Zool. Soc.* 1836, p. 3; *Lesson, Hist. Nat. Anim.* vol. x, p. 290, 1836; *Nouv. Tabl. Règne Anim., Mamm.* p. 177, 1842; *Laurillard, Dict. Univ. Hist. Nat.* vol. i, p. 623, 1841; *Wagner, Schreber's Säugthiere, Suppl.* vol. iv, p. 431, 1844, vol. v, p. 412, 1855; *Schinz, Synop. Mamm.* vol. ii, p. 421, 1845; *Giebel, Säugethiere*, p. 316, 1855; *Huet, Bull. Soc. Acclim.* ser. 4, vol. iv, p. 34, 1887.

Redunca montana, *A. Smith, S. African Quart. Journ.* vol. ii, p. 211, 1834.

Antilope brevicaudata, *Rüppell, M.S.* (*Neue Wirbelth. Abyssin., Mamm.* p. 25, 1835).

Tragelaphus montanus, *Rüppell, Verzeichniss Mus. Senckenberg.* p. 37, 1842.

Calotragus montanus, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 193, 1846; *Temminck, Esquiss. Zool. Guiné*, p. 191, 1853; *Heuglin, Nova Acta Ac. Cæs. Leop.-Car.* vol. xxx, pt. 2, p. 8, 1863, *Reise Nordost-Afrika*, vol. ii, p. 104, 1877.

Scopophorus montanus, *Gray, Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 232, 1846, ser. 2, vol. viii, p. 137, 1851, *Cat. Ungulata Brit. Mus.* p. 74, 1852, *Cat. Ruminants Brit. Mus.* p. 19, 1872; *Sclater, Proc. Zool. Soc.* 1864, p. 101; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 165, 1869; *Blanford, Zool. Abyssinia*, p. 266, 1870; *Giglioli, Ann. Mus. Genova*, ser. 2, vol. vi, p. 18, 1888; *Jentink, Cat. Mamm. Leyden Mus.* (*Mus. Pays-Bas*, vol. xi) p. 160, 1892.

Nanotragus montanus, *Brooke, Proc. Zool. Soc.* 1872, pp. 642 and 875; *W. L. Sclater, Cat. Mamm. Ind. Mus.* pt. ii, p. 166, 1891; *Flower and Lydekker, Study of Mammals*, p. 339, 1891; *Ward, Records of Big Game*, p. 82, 1892; *Lydekker, Horns and Hoofs*, p. 218, 1893.

Ourebia montana, *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 25, 1895; *Rothschild, Powell-Cotton's Sporting Trip through Abyssinia*, p. 464, 1902; *Pocock, Proc. Zool. Soc.* 1910, p. 882; *Blaine, Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 147, 1913.

Oribia montana, *Lydekker, Great and Small Game of Africa*, p. 239, 1899, *Game Animals of Africa*, p. 172, 1908; *Ward, Records of Big Game*, ed. 6, p. 178, 1910.

Typical locality Fazogloa Range, Blue Nile.

Height at shoulder 22 to 23 inches. Distinguished from typical species by the shorter and less bushy tail, which has

only a few black hairs at the tip, but a number of white ones along the sides of the lower surface; ear-patch large and completely bare; no dark frontal mark. Basal length of skull $5\frac{5}{8}$, greatest width $2\frac{7}{8}$, length from muzzle to orbit $3\frac{3}{8}$ inches.

It is not possible at present to give a key to the two races, especially as *cottoni* may have to be classed as a third race of this species.

A.—Ourebia montana montana.

General characters those given above.

Typical locality Fazogloa Range, Blue Nile.

73. 8. 29. 4. Skull, with horns, and skin. Dembelas, Abyssinia. *Purchased*, 1873.

73. 8. 29. 5, 6. Two skulls and skins. Same locality. *Same history.*

2. 4. 5. 4. Skull, with horns, and skin (scalp separate). Adamadis, Madi District. *Presented by C. S. Betton, Esq.*, 1902.

11. 5. 28. 2, 3. Two skulls, male, with horns, and female, and skins. South-west of Shambé, Bahr-el-Ghazal. *Presented by F. C. Selous, Esq.*, 1911.

9. 7. 8. 5. Skin, female. Near Tonga Island, White Nile. *Presented by C. C. Tower, Esq.*, 1909.

8. 4. 2. 56. Skull, with horns. Upper Nile. *Presented by A. L. Butler, Esq.*, 1908.

8. 4. 2. 57. Skull and skin. Same locality. *Same history.*

0. 8. 6. 7, 8. Two skulls, male, with horns, and female, and skin. White Nile; 11° N. Lat. *Presented by Capt. S. S. Flower*, 1900.

1. 8. 8. 41. Skull, with horns. Kaka, White Nile. *Presented by R. Mc. D. Hawker, Esq.*, 1901.

6. 9. 12. 1, 2. Two skulls, immature, with horns. Mongalla, Bahr-el-Ghazal. *Presented by Crawford Logan, Esq.*, 1906.

3. 12. 15. 1. Head, immature, mounted, and skull. Dinder Valley, Blue Nile. *Presented by A. W. Haig, Esq.*, 1903.

12. 11. 13. 16. Four mounted heads. Dinder Valley; collected by Capt. M. E. T. Gunthorpe.
Presented by Col. E. J. Gunthorpe, 1912.

1. 1. 25. 1. Skull, with horns. Addis Abeba, Abyssinia.
Presented by Capt. C. Wellby, 1901.

12. 11. 2. 1 Skull, immature, female. Keilak, Southern Kordofan. *Presented by Capt. B. V. G. Durnford*, 1912.

B.—Ourebia montana æquatoria.

Ourebia montana æquatoria, *Heller, Smithson. Misc. Collect.* vol. lx, no. 8, p. 12, 1912.

Typical locality Lado Enclave.

The following is the original description:—"Nearest *cottoni* (*infra*, p. 144), but differing by the smaller, less vertical horns, which are less heavily ringed and lighter; dorsal coloration with darker tips to the ears and a few dark hairs in the tip of the tail; hair shorter; horns much heavier than in *montana*, but slanting backward at same angle, tympanic bullæ and nasal bones larger. Intermediate in horn-characters between *cottoni* and *montana*, but coloration nearer *cottoni* . . . The difference between this race and *cottoni* is surprisingly slight, notwithstanding that these two races live at the extremes of the vertical range of the genus."

The last sentence suggests that the author regards *cottoni* as a race of the present species.

V. OUREBIA HAGGARDI.

Neotragus haggardi, *Thomas, Ann. Mag. Nat. Hist.* ser. 6, vol. xv, p. 187, 1895.

Ourebia haggardi, *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 29, 1895.

Oribia haggardi, *Lydekker, Great and Small Game of Africa*, p. 239, 1899, *Game Animals of Africa*, p. 176, 1908; *Ward, Records of Big Game*, ed. 6, p. 180, 1910.

Typical locality Lamu district, British East Africa.

Shoulder-height about 24 inches. Specially characterised by the stout and compressed horns, with the ridges pronounced and strongly angulated, and the lateral profile

slightly sinuous; general colour greyer than usual; tail black-tufted; skull very shallow.

87. 3. 9. 2. Skull, with horns. Lamu, British East Africa. Co-type. *Presented by J. G. Haggard, Esq.*, 1887.

87. 3. 9. 3. Skull, with horns. Lamu. Co-type. *Same history.*

87. 3. 9. 4. Skull, with horns, immature. Lamu. *Same history.*

95. 6. 9. 1. Skull, with horns, and skin. Doruma district, 25 miles inland of Mombasa. *Presented by A. H. Neumann, Esq.*, 1895.

VI. OUREBIA KENYÆ.

Ourebia kenyæ, *Meinertzhagen, Proc. Zool. Soc.* 1905, vol. i, p. 169.
Oribia kenyæ, *Lydekker, Game Animals of Africa*, p. 174, 1908.

Typical locality Kenia district, British East Africa.

Nearly related to *O. haggardi*, and standing from about 23 to 25 inches at the shoulder, this species (or [?] race) is distinguished by the horns being less thick, and not so roughly and irregularly ridged, as well as by their more forward direction and greater divergence. General colour bright fulvous or ochery tawny; chin, throat, and a streak running from above the eye towards muzzle white; ears fringed above with dark brown; tail about 4 inches long, its terminal three-fourths tufted and black and basal fourth edged with black below. Lachrymal depression narrow.

In the last-mentioned feature, as well as in its black-tufted tail, this species shows affinity with *O. hastata*.

4. 11. 5. 28. Skull, with horns. Fort Hall, British East Africa. Type. *Presented by Capt. R. Meinertzhagen*, 1904.

4. 11. 5. 24–26. Three skulls, with horns (fig. 14). Fort Hall. *Same history.*

4. 11. 5. 27. Skull, female. Same locality. *Same history.*

4. 11. 5. 29–31. Three skulls, with horns. Same locality. *Same history.*

4. 12. 6. 13. Skull, with horns. Same locality. *Presented by S. L. Hinde, Esq.*, 1904.

4. 12. 6. 12. Skull, with horns, and skin. Same locality. *Same history.*

7. 11. 18. 2. Skull, with horns, and skin. Foot of Mount Kenia. *Presented by R. J. Cuninghame, Esq.*, 1907.

7. 11. 18. 3. Skull and skin, female. Same locality. *Same history.*



FIG. 14.—FRONT AND SIDE VIEWS OF SKULL AND HORNS OF KENIA ORIBI (*Ourebia kenyæ*).

VII. OUREBIA MICRODON.

Ourebia microdon, *Hollister*, *Smithson. Misc. Collect.* vol. lvi, no. 2, p. 4, 1910.

Oribia microdon, *Lydekker*, *Game Animals of Africa*, *Suppl.* p. 10, 1911.

Typical locality Guasin-gishu Plateau, British East Africa.

Type in United States National Museum.

A large species, known by the skull, in which the upper

series of cheek-teeth is unusually short, occupying less length than in species with absolutely smaller skulls; rostral portion of skull elongated; horns short, stout, and heavily ridged. Apparently most nearly related to *kenyæ*, from which it differs by its larger size, longer cranial rostrum and nasals, square and flat basioccipital, and shorter and more heavily ridged horns. Some of the dimensions of the type skull are contrasted below with those of other species; the measurements in millimetres:—

	microdon.	*cottoni.*	*kenyæ.*	*montana.*
Maximum length	175	168	165	164
Condylo-basal length	163	157	154	153
Basal length	152	146	143	144
Maximum width	77	75	75	74
Muzzle to orbit	95	87	85	86
Length of upper row of cheek-teeth.	48	53	49	50

No specimen in collection.

VIII. OUREBIA GOSLINGI.

Ourebia goslingi, *Thomas and Wroughton*, *Ann. Mag. Nat. Hist.* ser. 7, vol. xix, p. 387, 1897; *Alexander*, *From Niger to Nile*, vol. ii, p. 392, 1907.

Oribia goslingi, *Lydekker*, *Game Animals of Africa*, p. 177, 1908.

Typical locality Niangara, Wellé Valley, Congo.

Characterised by its large size (approximately the same as in *hastata*), coupled with the presence of a conspicuous black patch extending from the forehead between the horns to base of ears, and recalling the somewhat similar mark in *ourebi*; a black tinge on back; hairs smoky grey at base, and dark brown above, with a bright buff ring below the small black tip. Horns longer than in *montana*, but shorter and slighter than in *kenyæ*. Length of ear $4\frac{1}{4}$ inches (107 mm.), of hind-foot $11\frac{3}{16}$ (300 mm.), of tail $3\frac{3}{4}$ inches (94 mm.); basal length of skull $6\frac{5}{16}$ inches (160 mm.), greatest breadth $2\frac{7}{8}$ (73 mm.), length from orbit to muzzle $3\frac{7}{8}$ inches (98 mm.).

7. 7. 8. 215. Skull and skin, female. Niangara, Upper Wellé Valley. Type. Collected during the Alexander-Gosling Expedition.

Presented by the Alexander-Gosling Expedition, 1907.

7. 7. 8. 213. Skull, with horns, and skin. Bimu, Wellé Valley. Same collection. *Same history.*

7. 7. 8. 214. Skull, with horns, immature. Danga, Congo. Same collection. *Same history.*

7. 7. 8. 216. Skull and skin, female. Nigeria. *Same history.*

7. 7. 8. 217. Skull, with horns. Nigeria. Same collection. *Same history.*

7. 7. 8. 218. Skull and skin, female. Nigeria. Same collection. *Same history,* 1907.

IX. OUREBIA COTTONI.

Ourebia cottoni, *Thomas*, *Ann. Mag. Nat. Hist.* ser. 8, vol. i, p. 177, 1908; *Hollister*, *Smithson. Misc. Collect.* vol. lvi, no. 2, p. 4, 1910; *Heller*, *ibid.* vol. lx, no. 8, p. 12, 1910.

Oribia cottoni, *Lydekker*, *Game Animals of Africa*, p. 177, 1908.

Typical locality Guasin-gishu Plateau, British East Africa.

About the size of *O. goslingi* (23 inches at shoulder), but with a rather longer coat and the general colour paler and brighter, being tawny, fading to buff on flanks, instead of dark clay-colour shading into ochre; hairs drab for basal two-thirds, but otherwise buff, except for very small black tips; no distinct dark frontal mark; tail very short, less than one-third the length of that of *goslingi*, about $1\frac{1}{4}$ inches. Horns short and well ridged, although not so strongly as in *haggardi*, skull, compared with that of *goslingi*, broader, stouter, and shorter in front of orbits.

7. 12. 29. 1. Skull, with horns, and skin. Surgoit Rock, Guasin-gishu Plateau, British East Africa. Type. *Presented by Major P. H. G. Powell-Cotton,* 1907.

7. 12. 29. 2. Skin, mounted, and skull. Same locality. *Same history.*

X. OUREBIA GALLARUM.

Ourebia gallarum, *Blaine*, *Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 146, 1913.

Typical locality shores of Lake Helene, about 60 miles south of Addis Abeba, Abyssinia.

A large species, with long wavy hair and complete absence of a dark frontal patch. General colour bright orange-fawn, deeper along dorsal line, with the tips of the hairs cream and their bases whitish; forehead uniformly orange-fawn. Skull relatively large and massive, with great development of the bridge across the rostrum in front of orbits, and the consequent marked concavity of the facial profile; nasals depressed; lachrymal depression large and deep; horns short and stout, inclining strongly backwards, as in *montana*, and ridged only at base. Basal length of skull 6 inches (152 mm.), greatest width $3\frac{5}{16}$ (84 mm.), length of nasals $2\frac{11}{16}$ (67 mm.), of upper row of cheek-teeth $2\frac{1}{16}$ (52 mm.).

The skull approximates to that of *O. cottoni*, in which the basal length is $5\frac{3}{4}$ inches (145 mm.), but differs by the more backward inclination of the horns, resembling in this respect *O. montana*, in which the basal skull-length is $6\frac{3}{16}$ inches (156 mm.). The hair is brighter and richer in tone than that of *cottoni*, and quite different from the grizzled fawn of *montana*; while in its waviness it differs from both.

6. 11. 1. 58. Skull, with horns, and skin. Lake Helene, Omo Valley, Abyssinia; collected by Mr. Zaphiro. Type.
Presented by W. N. McMillan, Esq., 1906.

The following specimens are not yet specifically determined:—

4. 8. 1. 3. Skull, with horns. South-western Ankoli, Uganda; collected by Mr. W. G. Doggett.
Presented by Lieut.-Col. C. Delmé-Radcliffe, 1904.

4. 8. 1. 4. Skull, immature female. South-western Ankoli; same collector. *Same history.*

4. 11. 5. 31. Skull, with horns. Uganda.
Presented by Capt. R. Meinertzhagen, 1904.

II. Genus RAPHICERUS.

Raphicerus, *H. Smith, Griffith's Animal Kingdom*, vol. v, p. 342, 1827; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 33, 1895; *Pocock, Proc. Zool. Soc.* 1910, p. 879.

Calotragus, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 192, 1846.

Rhaphocerus, *Agassiz, Nomenclator Zool., Index Univ.* p. 321, 1846.

Pediotragus, *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 163, 1869; *Jentink*, *Notes Leyden Mus.* vol. xxii, p. 30, 1900.

Raphiceros, *Thomas*, *Proc. Zool. Soc.* 1896, p. 796.

Rhaphiceros, *Lydekker*, *Great and Small Game of Africa*, p. 249, 1899; *Rothschild*, *Proc. Zool. Soc.* 1907, p. 237.

No bare patch below ear, or tufts on knees; tail short; horns rising nearly vertically, slender, with slightly developed ridges on basal half; lateral hoofs present or absent. Skull stout and strong, with a sharp broad muzzle, small but deep lachrymal depressions, of which the upper and lower margins are rounded.

For the distinctive characteristics of the foot of this genus, as compared with that of *Ourebia*, see Pocock, Proc. Zool. Soc., 1910, p. 885.

The distributional area is restricted to Southern and Eastern Africa.

The genus is divisible into the two following groups:—

A. Lateral hoofs wanting (*Raphicerus*).
 a. Coat uniformly coloured..... *R. campestris.*
 b. Coat speckled..... *R. sharpei.*

B. Lateral hoofs present (*Nototragus*)..... *R. melanotis.*

1. Subgenus **RAPHICERUS.**

Lateral hoofs wanting.

I. RAPHICERUS CAMPESTRIS.

Capra grimmia, *Thunberg*, *Reise*, vol. ii, p. 8, 1789, nec *Linn.*

Antilope campestris, *Thunberg*, *Mém. Ac. Sci. St. Pétersb.* vol. iii, p. 311, 1811.

Antilope tragulus, *Lichtenstein*, *Mag. nat. Freunde*, vol. vi, p. 176, 1814, *Darstellung. Säugeth.* pl. xiv, 1828; *Goldfuss*, *Schreber's Säugthiere*, vol. v, p. 1234, 1818; *Schinz*, *Cuvier's Thierreich*, vol. i, p. 392, 1821; *Desmarest*, *Mammalogie*, vol. ii, p. 458, 1822; *J. Fischer*, *Synop. Mamm.* p. 464, 1829; *Smuts*, *Enum. Mamm. Cap.* p. 81, 1832; *Owen*, *Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii, p. 633, 1868; *Lesson*, *Hist. Nat. Mamm.* vol. x, p. 291, 1836, *Nouv. Tabl. Règne Anim., Mamm.* p. 177, 1842; *Oken*, *Allgemeine Naturgesch.* vol. vii, p. 1362, 1838; *Laurillard*, *Dict. Univ. Hist. Nat.* vol. i, p. 622, 1841; *Gervais*, *Dict. Sci. Nat., Suppl.* vol. i, p. 262, 1840; *Forster*, *Descrip. Anim.* pp. 36 and 374, 1844; *Wagner*, *Schreber's Säugthiere, Suppl.* vol. iv, p. 436, 1844, vol. v, p. 410, 1855; *Schinz*,

Synop. Mamm. vol. ii, p. 411, 1845; *Peters, Reise nach Mossambique, Säugeth.* p. 187, 1852; *Giebel, Säugethiere*, p. 318, 1855; *Huet, Bull. Soc. Acclim.* ser. 4, vol. iv, p. 88, 1887.

Antilope tragulus rupestris, *Lichtenstein, Mag. nat. Freunde*, vol. vi, p. 177, 1814; *Forster, Descrip. Anim.* p. 376, 1844.

Antilope capensis (*for* campestris), *Afzelius, Nova Acta Soc. Upsal.* vol. vii, p. 254, 1815.

Antilope ibex, *Afzelius, op. cit.* p. 263, 1815; *Lesson, Man. Mamm.* p. 376, 1827.

Cerophorus (Cervicapra) stenbock, *Blainville, Bull. Soc. Philom.* 1816, p. 75.

Cerophorus (Cervicapra) acuticornis, *Blainville, op. cit.* pp. 75 and 79, 1816, *Journ. Phys.* Aug. 1818, pl. i, fig. 8, *Oken's Isis*, 1819, vol. ii, p. 1095.

Antilope acuticornis, *Desmarest, Nouv. Dict. Hist. Nat.* vol. ii, p. 193, 1816, *Mammalogie*, vol. ii, p. 460, 1820; *Schinz, Cuvier's Thierreich*, vol. i, p. 395, 1821; *Lesson, Man. Mamm.* p. 377, 1827; *Flower and Garson, Cat. Osteol. Mus. R. Coll. Surg.* pt. ii, p. 275, 1884.

Antilope rupestris, *Burchell, Travels in S. Africa*, vol. i, p. 202, 1822, vol. ii, p. 15, 1824; *H. Smith, Griffith's Animal Kingdom*, vol. iv, p. 248, vol. v, p. 340, 1827; *Schinz, Synop. Mamm.* vol. ii, p. 412, 1845.

Antilope fulvo-rufescens, *Desmoulins, Dict. Class. Hist. Nat.* vol. i, p. 446, 1822.

Antilope (Raphicerus) acuticornis, *H. Smith, Griffith's Animal Kingdom*, vol. iv, p. 252, vol. v, p. 342, 1827; *Lesson, Hist. Nat. Mamm.* vol. x, p. 292, 1836, *Nouv. Tabl. Règne Anim.* p. 177, 1842; *Gervais, Dict. Sci. Nat., Suppl.* vol. i, p. 262, 1840.

Antilope (Raphicerus) subulata, *H. Smith, Griffith's Animal Kingdom*, vol. iv, p. 253, vol. v, p. 342, 1827; *Lesson, Hist. Nat. Mamm.* vol. x, p. 292, 1836, *Nouv. Tabl. Règne Anim.* p. 177, 1842; *Gervais, Dict. Sci. Nat., Suppl.* vol. i, p. 262, 1840.

Tragulus rupestris, *A. Smith, S. African Quart. Journ.* vol. ii, p. 212, 1834; *Harris, Wild Anim. S. Africa*, pl. xxv, fig. 2, 1840.

Tragelaphus tragulus, *Rüppell, Verzeichniss Mus. Senckenberg.* p. 37, 1842.

Oreotragus tragulus, *Gray, List Mamm. Brit. Mus.* p. 164, 1843, *List. Osteol. Brit. Mus.* p. 146, 1847.

Calotragus campestris, *Gray, Cat. Ungulata Brit. Mus.* p. 71, 1852; *Layard, Cat. S. African Mus.* p. 68, 1861; *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 235, 1862.

Calotragus tragulus, *Sclater, Proc. Zool. Soc.* 1861, p. 209.

Pediotragus tragulus, *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 163, 1869; *Jentink, Notes Leyden Mus.* vol. ix, p. 173, 1873, vol. xv, p. 262, 1893, vol. xxii, p. 30, 1900, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 134, 1887, *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 165, 1892; *Max Weber, Arch. mikr. Anat.* vol. xxi, p. 500, 1888.

Pediotragus tragulus grayi, *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 163, 1869.

Pediotragus campestris, *Gray, Cat. Ruminants Brit. Mus.* p. 31, 1872, *Hand-List Ruminants Brit. Mus.* p. 100, 1873; *O. Neumann, Sitzber. Ges. nat. Freunde*, 1900, p. 559.

Nanotragus tragulus, *Brooke, Proc. Zool. Soc.* 1872, pp. 642 and 874; *Buckley, ibid.* 1876, p. 283; *Bocage, ibid.* 1878, p. 742; *Selous, ibid.* 1881, p. 762, *A Hunter's Wanderings in S. Africa*, p. 222, 1881; *Bryden, Kloof and Karroo*, p. 300, 1889; *Hunter, Willoughby's East Africa*, p. 290, 1889; *Crawshay, Proc. Zool. Soc.* 1890, p. 654; *W. L. Sclater, Cat. Mamm. Ind. Mus.* pt. ii, p. 166, 1891; *Flower and Lydekker, Study of Mammals*, p. 339, 1891; *Lugard, E. Africa*, vol. i, p. 540, 1893.

Neotragus tragulus, *Sclater, List Anim. Zool. Gardens*, p. 145, 1883.

Nanotragus campestris, *Nicolls and Eglington, Sportsman in S. Africa*, p. 24, 1892; *Lydekker, Horns and Hoofs*, p. 217, 1893; *Jackson, Big Game Shooting* (*Badminton Library*), vol. i, pp. 285 and 391, 1894; *Lorenz, Ann. Hofmus. Wien*, vol. ix, p. 60, 1895.

Neotragus campestris, *Rendall, Proc. Zool. Soc.* 1895, p. 361.

Raphicerus campestris, *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 41, pl. xxvii, fig. 1, 1895, vol. iv, p. 225, 1900; *W. L. Sclater, Fauna S. Africa, Mamm.* vol. i, p. 173, 1900; *Pocock, Proc. Zool. Soc.* 1910, p. 879.

Rhaphiceros campestris, *Kirby, Great and Small Game of Africa*, p. 251, 1899; *Lydekker, Game Animals of Africa*, p. 181, 1908; *Ward, Records of Big Game*, ed. 6, p. 185, 1910.

Pediotragus horstocki, *Jentink, Notes Leyden Mus.* vol. xxii, p. 39, 1900.

Rhaphiceros horstocki, *Rothschild, Proc. Zool. Soc.* 1907, p. 237.

Rhaphicerus campestris, *Lönnberg. Arkiv Zool.* vol. v, No. 10, p. 4, 1909.

STEINBOK.

Type of *Raphicerus, Calotragus*, and *Pediotragus*.

Typical locality Cape Colony.

Height at shoulder from about 21 to 22 inches. General colour bright sandy rufous, deeper on head; muzzle and a horseshoe-like patch on crown usually dark brown; a white stripe above outer angle of each eye; tail short, coloured above like back, below white, as is also under surface of body; lateral hoofs wanting; horns relatively larger than in the oribis, the maximum recorded length being $7\frac{1}{2}$ inches. Skull stout, with the frontal surface roughened and ridged, and the premaxillæ articulating with the nasals. Length of hind-foot $9\frac{3}{4}$, of ear $4\frac{1}{5}$ inches; basal length of skull $4\frac{7}{8}$, maximum width $2\frac{3}{4}$, length from muzzle to orbit $2\frac{5}{8}$ inches.

The range extends on the west to the Cuneni and on the east to the Zambesi.

The following local races have been named:—

A. Usually a dark coronal mark.
 a. General colour orange rufous, with much white on belly..... *R. c. campestris.*
 b. General colour vinaceous rufous, with less white below..... *R. c. natalensis.*

B. No dark coronal mark, at least in male.
 a. Auditory bulla small.
 a'. No dark nose-spot *R. c. neumanni.*
 b'. A dark nose-spot *R. c. stigmaticus.*
 b. Auditory bulla large..... *R. c. capricornis.*

A.—Raphicerus campestris campestris.

Rhaphiceros campestris typicus, *Kirby, Game Animals of Africa*, p. 251, 1899.

Typical locality South Africa.

General colour orange rufous, with a large white area on the under-parts and relatively large white patches on the throat and round the eyes.

43. 12. 7. 24. Skin. South Africa; collected by Verreaux. *Purchased*, 1843.

46. 8. 3. 44. Skull, with horns. South Africa; same collector. *Purchased*, 1846.

46. 11. 20. 10. Skull, with horns, immature. South Africa. *Purchased*, 1846.

46. 11. 18. 28. Skull, with horns. South Africa. *Purchased* (*Stevens*), 1846.

776, *g*. Skull, with horns. South Africa. *Bequeathed by Gen. T. Hardwicke*, 1835.

994, *c*. Skeleton, with horns. South Africa (?). *Purchased* (*Zoological Society*).

1. 8. 5. 1. Skull, with horns, and skin. Near Worcester, Cape Colony. *Purchased*, 1901.

2. 12. 1. 32. Skull and skin, immature female. Deelfontein, Cape Colony; collected by Mr. C. H. B. Grant. *Presented by Lieut.-Col. A. T. Sloggett, C.M.G.*, 1902.

2. 12. 1. 33. Skull and skin, immature female. Same locality and collector. *Same history.*

3. 3. 6. 29, 30. Two young specimens, in spirit. Same locality and collector. *Same donor*, 1903.

4. 3. 1. 96. Skull, female. Fredefort Road, Northern Orange River Colony.

Presented by Major G. B. H. Barrett-Hamilton, 1904.

3. 5. 10. 1. Skin, mounted. South Africa.

Purchased, 1903.

4. 2. 2. 8. Skull, with horns, and skin. Durban Road, Cape Colony; collected by Mr. C. H. B. Grant.

Presented by C. D. Rudd, Esq., 1904.



FIG. 15.—FRONT AND SIDE VIEWS OF SKULL OF STEINBOK (*Raphicerus campestris*).

4. 12. 3. 99. Skull, with horns, and skin. Umvolosi Valley, Zululand. Same collector. *Same history.*

4. 12. 3. 100, 101. Two skulls and skins, female. Same locality and collector. *Same history.*

4. 12. 3. 102. Skull and skin, female, imperfect. Hlatwa district, Zululand. Same collector. *Same history.*

4. 12. 3. 120. Skull, with horns (fig. 15), and skin. Umvolosi. Same collector. *Same history.*

4. 2. 3. 120. Skull and skin, female. Klipfontein, Namaqualand. Same collector. *Same history.*

6. 11. 8. 142–144. Three skulls and skins (one female). Coguno, Inhambane, Zululand. Same collector.

Same history.

B.—Raphicerus campestris natalensis.

Rhaphiceros horstocki natalensis, *Rothschild*, *Proc. Zool. Soc.* 1907, p. 237 ; *Lydekker*, *Game Animals of Africa*, p. 182, 1908.

Typical locality Drakensberg district of Natal.

Differs from typical race by its much darker colour, which is deep vinaceous rufous, and by the smaller size of the white patches on the throat and round the eyes and the extent of the white of the under-parts.

83. 7. 27. 2. Skull, with horns, provisionally referred to this race. Port Elizabeth ; collected by F. C. Selous, Esq.

Purchased, 1883.

C.—Raphicerus campestris neumanni.

Pediotragus neumanni, *Matschie*, *Sitzber. Ges. nat. Freunde*, 1894, p. 122, *Säugeth. Deutsch-Ostafrika*, p. 120, 1895.

Raphicerus neumanni, *Sclater and Thomas*, *Book of Antelopes*, vol. ii, p. 47, 1895 ; *Thomas and Schwann*, *Proc. Zool. Soc.* 1906, p. 584 ; *Lönnberg*, *Sjöstedt's Kilimandjaro-Meru Exped.*, *Mamm.* p. 40, 1908 ; *K. Svenska Vet.-Ak. Handl.* vol. xlviii, art. 5, p. 153, 1912.

Rhaphiceros campestris neumanni, *Hunter*, *Great and Small Game of Africa*, p. 253, 1899 ; *Lydekker*, *Game Animals of Africa*, p. 180, 1908.

Nototragus neumanni, *Roosevelt*, *African Game Trails*, p. 487, 1910.

Typical locality Northern Ugogo, German East Africa.

Type in Berlin Museum.

Distinguished from typical race by the absence, at least in the male, of the dark coronal crescentic mark, the paler general colour, and the greater development of the white facial markings, which form complete rings round the eyes, are wider on the margins of the ears, more clearly defined on the chin, throat and inner sides of the limbs, and include the lips. The skull is slightly larger.

The reference of some of the following specimens is provisional:—

89. 8. 3. 5. Skull, with horns, and head-skin, immature. Between Kilimanjaro and coast.

Presented by H. C. V. Hunter, Esq., 1889.

89. 8. 3. 6. Skull, with horns. Same locality.

Same history.

92. 10. 18. 13. Skull, immature female. Kilimanjaro; collected by Sir F. J. Jackson, K.C.M.G., C.B. *Purchased*, 1892.

90. 6. 8. 34. Immature skin. District between Equatoria and Bagamaja; collected by Dr. Emin, Pasha.

Purchased, 1890.

0. 3. 27. 28, 29. Two skins. British East Africa.

Presented by the Lord Delamere, 1900.

3. 6. 10. 3. Skin. Nedenit Valley, Lake Nakuru, British East Africa. *Presented by F. C. Selous, Esq.*, 1903.

4. 11. 5. 23. Skull, with horns. Nyeri, British East Africa. *Presented by Capt. R. Meinertzhagen*, 1904.

9. 5. 27 2. Skull, with horns. Mt. Kenia, British East Africa. *Presented by R. J. Cuninghame, Esq.*, 1909.

8. 9. 26. 3. Skin. Moshi Station, Kilimanjaro.

Presented by A. B. Perceval, Esq., 1908.

0. 9. 3. 2. Skull, with horns, and skin. Bondoni Hills, near Machakos, British East Africa.

Presented by R. Crawshay, Esq., 1900.

1. 8. 9. 68. Skull and skin, female. Ravine Station, British East Africa.

Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1901.

6. 1. 5. 7. Skull, with horns, and skin. Kilimanjaro.

Presented by Major R. T. Bright, 1906.

3. 12. 14. 1. Skull, with horns, and skin. Ussangu, German East Africa.

Presented by F. Russell Roberts, Esq., 1903.

D.—Raphicerus campestris stigmaticus.

Rhaphiceros neumanni stigmaticus, *Lönnberg, Sjöstedt's Kilimandjaro-Meru Exped., Mamm.* p. 40, 1908.

Typical locality Kilimanjaro.

Type in Swedish Zoological Museum.

Differs from *neumanni* by presence of a dark brown triangular spot on nose, contrasting strongly with rufous of face. Further evidence is required to show whether this feature is constant, although there are stated to be distinctive characters in the skull.

E.—Raphicerus campestris capricornis.

Raphicerus neumanni capricornis, *Thomas and Schwann, Proc. Zool. Soc.* 1906, p. 584.

Rhaphiceros campestris capricornis, *Lydekker, Game Animals of Africa*, p. 181, 1908.

Typical locality Klein Letaba, Transvaal.

Distinguished from the East African race by the larger auditory bullæ and rather longer nasals; slight traces of the dark coronal mark of the typical race persist in the female.

5. 12. 9. 78. Skull, with horns, and skin. Klein Letaba, north-eastern Transvaal; collected by Mr. C. H. B. Grant. Type. *Presented by C. D. Rudd, Esq.*, 1905.

5. 12. 9. 79. Skull and skin, female. Same locality and collector. *Same history.*

97. 8. 25. 1–3. Three skulls, with horns, one immature, provisionally referred to this race. Enkeldoorn, Mashonaland. *Presented by J. ffoliott Darling, Esq.*, 1897.

The following form, if distinct, may indicate another race of this species:—

Pediotragus kelleni, *Jentink, Notes Leyden Mus.* vol. xxii, p. 41, 1900; *Sclater and Thomas, Book of Antelopes*, vol. iv, p. 225, 1900.

Typical locality, Cuneni Valley, Mossamedes.

Known by two skulls in the Leyden Museum.

II. RAPHICERUS SHARPEI.

Raphiceros sharpei, *Thomas, Proc. Zool. Soc.* 1896, p. 796, pl. xxxix; *Chubb, Proc. Rhodesia Scient. Assoc.* vol. vii, p. 30, 1908; *Hamilton, Proc, Zool. Soc.* 1913, p. 539.

Rhaphiceros sharpei, *Bryden, Great and Small Game of Africa*, p. 251, 1899; *Lydekker, Game Animals of Africa*, p. 180, 1908; *Ward, Records of Big Game*, ed. 6, p. 187, 1910.

Raphicerus sharpei, *Sclater and Thomas, Book of Antelopes*, vol. iv, p. 225, 1890; *Thomas and Schwann, Proc. Zool. Soc.* 1906, p. 583.

Typical locality southern Angoniland.

A species with feet like those of *R. campestris* and a white-speckled coat similar to that of *R. melanotis*.

Size much the same as in *campestris*. General colour rich tawny rufous, brighter than in *campestris* or *melanotis*, but white hairs intermingled with the dark ones; muzzle brown above, darkest in middle line but without sharply defined nose-patch; sides of muzzle dirty white; cheeks and sides of neck fawn; crown with crescentic mark; ears large, thinly haired at back, the hairs mostly white, but black on margins; under-parts and limbs as in *campestris*; tail short, above like back, white below.

The distributional area extends from Nyasaland through Mashonaland to the north-eastern Transvaal. The two local races are characterised as follows:—

a. Feet and bullæ small..... *R. s. sharpei.*
b. Feet and bullæ larger..... *R. s. colonicus.*

A.—Raphicerus sharpei sharpei.

Typical locality southern Angoniland.

Feet and auditory bulla relatively small; general colour without distinct purplish tinge; under-parts white or whitish, with very slight tinge of buff.

96. 10. 26. 3. Skin. Southern Angoniland. Type.
Presented by Sir Alfred Sharpe, K.C.M.G., C.B., 1896.

0. 5. 14. 1. Skull, with horns, and skin. West of Lake Mweru, North-west Rhodesia. *Same history.*

1. 4. 27. 11. Skin, female. Nyasaland.
Presented by Lieut.-Col. Manning, 1901.

1. 6. 26. 4. Skull, with horns, and skin. Inpimbi, Nyasaland. *Same history.*

1. 6. 26. 5. Skull and skin, female. Same locality.
Same history.

5. 1. 29. 1. Skull and skin, female. Rhodesia.
Presented by Capt. J. B. Dunbar, 1905.

5. 11. 14. 1. Skin, mounted. Near junction of Lien with Zambesi, Portuguese East Africa.
Presented by Monsieur L. de Vries, 1905.

B.—Raphicerus sharpei colonicus.

Raphicerus sharpei colonicus, *Thomas and Schwann, Proc. Zool. Soc.* 1906, p. 583.

Rhaphiceros sharpei colonicus, *Lydekker, Game Animals of Africa*, p. 180, 1908; *Ward, Records of Big Game*, ed. 6, p. 187, 1910.

Typical locality Klein Letaba, Transvaal.

Feet longer than in typical race; general colour richer with a more distinct purplish tinge, and the white hairs more numerous; under-parts, including throat, purplish buff, with the bounding line indistinct on sides of belly; auditory bullæ larger. Basal length of skull $4\frac{7}{16}$ (112 mm.), maximum width $2\frac{9}{16}$ (64 mm.), length from muzzle to orbit $2\frac{5}{16}$ (59 mm.); length of tail 3 (76 mm.), of hind-foot without hoof $7\frac{3}{4}$ inches (195 mm.).

5. 12. 9. 81. Skull, with horns, and skin. Klein Letaba, north-eastern Transvaal; collected by Mr. C. H. B. Grant. Type. *Presented by C. D. Rudd, Esq.*, 1905.

5. 12. 9. 80. Skull, with horns, and skin. Same locality and collector. *Same history.*

8. 4. 3. 1. Skull and skin, female. Tetté, Zambesia. Same collector. *Same donor*, 1908.

2. Subgenus **NOTOTRAGUS.**

Nototragus, *Thomas and Schwann, Abstr. Proc. Zool. Soc.* 1906, p. 10; *Pocock, Proc. Zool. Soc.* 1910, p. 882.

Grysbock, *Knottnerus-Meyer, Arch. Naturgesch.* vol. lxxiii, pt. 1, p. 99, 1907.

Distinguished from *Raphicerus* by the retention of lateral hoofs.

III. RAPHICEROS (NOTOTRAGUS) MELANOTIS.

Antilope melanotis, *Thunberg, Mém. Ac. Sci. St. Pétersb.* vol. iii, p. 312, 1811; *Afzelius, Nova Acta Soc. Upsal.* vol. vii, pp. 257 and 262, 1815; *Goldfuss, Schreber's Säugthiere*, vol. v, p. 1235, 1818; *Desmarest, Mammalogie*, vol. ii, p. 459, 1822; *Lesson, Man. Mamm.* p. 376, 1827; *Lichtenstein, Darstellung. Säugeth.* pl. xii, 1828; *J. B. Fischer, Synop. Mamm.* p. 465, 1829; *Smuts, Enum. Mamm. Cap.* p. 82, 1832; *Owen, Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii, p. 633, 1868; *Waterhouse, Cat. Mamm. Mus. Zool. Soc.* p. 42, 1838; *Oken, Allgemeine Natur-*

gesch. vol. vii, p. 1363, 1838; *Laurillard, Dict. Univ. Hist. Nat.* vol. i, p. 623, 1841; *Wagner, Schreber's Säugthiere, Suppl.* vol. iv, p. 438, 1844, vol. v, p. 411, 1855; *Schinz, Synop. Mamm.* vol. ii, p. 413, 1845; *Peters, Reise nach Mossambique, Säugeth.* p. 187, 1852; *Giebel, Säugethiere*, p. 318, 1855; *Huet, Bull. Soc. Acclim.* ser. 4, vol. iv, p. 488, 1887.

Antilope tragulus melanotis, *Lichtenstein, Mag. nat. Freunde*, vol. vi, p. 176, 1814; *Forster, Descrip. Anim.* p. 375, 1844.

Antilope grisea, *Cuvier, Dict. Sci. Nat.* vol. ii, p. 244, 1816; *Burchell, List Mamm. presented to Brit. Mus.* p. 6, 1825; *H. Smith, Griffith's Animal Kingdom*, vol. iv, p. 250, vol. v, p. 341, 1827; *Lesson, Nouv. Tabl. Règne Anim., Mamm.* p. 177, 1842; nec *Boddaert.*

Cerophorus (Cervicapra) grisea, *Blainville, Bull. Soc. Philom.* 1816, p. 75.

Antilope rubro-albescens, *Desmoulins, Dict. Class. Hist. Nat.* vol. i, p. 446, 1822.

Tragulus melanotis, *A. Smith, S. African Quart. Journ.* vol. ii, p. 213, 1834; *Harris, Wild Anim. S. Africa*, pl. xxvii, fig. 2, 1840.

Tragelaphus melanotis, *Rüppell, Verzeichniss Mus. Senckenberg.* p. 37, 1842.

Oreotragus griseus, *Gray, List Mamm. Brit. Mus.* p. 164, 1843.

Calotragus melanotis, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 192, 1846; *Gray, Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 232, 1846, ser. 2, vol. viii, p. 136, 1851, *Knowsley Menagerie*, p. 7, 1850, *Proc. Zool. Soc.* 1850, p. 118, *Cat. Ungulata Brit. Mus.* p. 72, 1852, *Cat. Ruminants Brit. Mus.* p. 19, 1872, *Hand-List Ruminants Brit. Mus.* p. 90, 1873; *Temminck, Esquiss. Zool. Guiné*, p. 192, 1855; *Layard, Cat. S. African Mus.* p. 70, 1861; *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 235, 1862; *Blyth, Cat. Mamm. Mus. Asiat. Soc. Bengal*, p. 166, 1863; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 165, 1869; *Jentink, Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 131, 1887, *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 159, 1892; *Matschie, Säugethiere Deutsch-Ostafrika*, p. 120, 1895.

Nanotragus melanotis, *Brooke, Proc. Zool. Soc.* 1872, p. 642; *Selous, ibid.* 1881, p. 627, *A Hunter's Wanderings in S. Africa*, p. 222, 1881; *Bryden, Kloof and Karroo*, p. 300, 1889; *W. L. Sclater, Cat. Mamm. Ind. Mus.* pt. ii, p. 167, 1891; *Flower and Lydekker, Study of Mammals*, p. 33, 1891; *Nicolls and Eglington, Sportsman in S. Africa*, p. 26, 1892; *Lydekker, Horns and Hoofs*, p. 219, 1893; *Lorenz, Ann. Hofmus. Wien*, vol. ix, p. 60, 1895.

Neotragus melanotis, *Sclater, List Anim. Zool. Gardens*, p. 145, 1883, *Proc. Zool. Soc.* 1895, p. 520; *Rendall, Proc. Zool. Soc.* 1895, p. 361.

Raphicerus melanotis, *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 35, pl. xxvii, fig. 2, 1895; *W. L. Sclater, Fauna S. Africa, Mamm.* vol. i, p. 176, 1900.

Rhaphiceros melanotis, *Lydekker, Great and Small Game of Africa*, p. 249, 1899, *Game Animals of Africa*, p. 181, 1908; *Ward, Records of Big Game*, ed. 6, p. 184, 1910.

Nototragus melanotis, *Thomas and Schwann, Abstr. Proc. Zool. Soc.* 1906, p. 10; *Pocock, Proc. Zool. Soc.* 1910, p. 882.

Grysbock melanotis, *Knottnerus-Meyer, Arch. Naturgesch.* vol. lxxiii, pt. 1, p. 99, 1907.

The following names have been applied to albinistic varieties of this or other species of the genus :—

Antilope tragulus pallida, *Lichtenstein, Mag. nat. Freunde*, vol. vi, p. 177, 1814; *Forster, Descrip. Anim.* p. 376, 1844.

Antilope pediotragus, *Afzelius, Nova Acta Soc. Upsal.* vol. vii, pp. 260 and 264, 1815; *Goldfuss, Schreber's Säugethiere*, vol. v, p. 1238, 1818; *Smuts, Enum. Mamm. Cap.* p. 84, 1832; *Gervais, Dict. Sci. Nat., Suppl.* vol. i, p. 262, 1840; *Lesson, Nouv. Tabl. Règne Anim., Mamm.* p. 177, 1842.

Antilope pallida, *H. Smith, Griffith's Animal Kingdom*, vol. iv, p. 251, vol. v, p. 342, 1827.

Antilope rufescens, *H. Smith, op. cit.* vol. iv, p. 249, vol. v, p. 341, 1827; *Lesson, Nouv. Tabl. Règne Anim., Mamm.* p. 177, 1842; *Schinz, Synop. Mamm.* vol. ii, p. 412, 1845.

Tragulus pediotragus, *A. Smith, S. African Quart. Journ.* vol. ii, p. 213, 1834.

Calotragus melanotis pallida, *Gray, Knowsley Menagerie*, p. 70, 1850, *Cat. Ungulata Brit. Mus.* p. 72, 1852.

Calotragus rufescens, *Temminck, Esquiss. Zool. Guiné*, p. 192, 1853.

Pediotragus rufescens, *Jentink, Cat. Mamm. Leyden Mus.* (*Mus. Pays-Bas*, vol. xi) p. 165, 1892.

GRYSBOK.

Typical locality Cape Colony.

Height about 22 inches. General colour of the long and coarse coat deep rich rufous profusely speckled with white, owing to the presence of a large number of white hairs; under-parts paler than back, but not white; frequently a blackish crescentic mark on crown; ears very large, grey externally; very small lateral hoofs present; tail very short, without any black at tip; horns of the same general type as those of *campestris*, but shorter, the maximum recorded length being $4\frac{7}{8}$ inches.

The range extends as far north as Zambesia and Mozambique.

46, *b*. Skin, female, mounted. Cape of Good Hope. *Presented by Dr. W. J. Burchell, about* 1817.

46, *a*. Skin. Cape of Good Hope. *Purchased.*

37. 9. 26. 123. Skull and skin, immature female. Cape

of Good Hope; collected by Verreaux. Referred by Gray in 1852 to his *Calotragus melanotis pallida*.

Purchased 1837.

38. 7. 13. 10. Skin, immature. South Africa.

Purchased (*Stevens*), 1838.

51. 5. 5. 18. Skull, immature, female.

Purchased, 1851.

62. 3. 19. 13. Skeleton. South Africa; collected by Sir George Grey. *Purchased* (*Zoological Society*), 1862.

63. 7. 7. 15. Skull, with horns, immature. East Africa.

Presented by Capt. J. H. Speke, 1863.

5. 5. 7. 112. Skull, with horns, and skin (head-skin separate). Plettenberg Bay, Knysna district, Cape Colony; collected by Mr. C. H. B. Grant.

Presented by C. D. Rudd, Esq., 1905.

5. 5. 7. 113. Skull and skin. Same locality and collector.

Same history.

III. Genus NEOTRAGUS.

Neotragus, *H. Smith*, *Griffith's Animal Kingdom*, vol. v, p. 349, 1827, as a subgenus; *Sclater and Thomas*, *Book of Antelopes*, vol. ii, p. 59, 1895.

Tragulus, *Ogilby*, *Proc. Zool. Soc.* 1836, p. 138, nec *Pallas*.

Minytragus, *Gloger*, *Naturgeschichte*, p. 154, 1841.

Spinigera, *Lesson*, *Nouv. Tabl. Règne Anim.*, *Mamm.* p. 178, 1842.

Nanotragus, *Sundevall*, *K. Svenska Vet.-Ak. Handl.* 1844, p. 191, 1846.

Dwarf antelopes, with small spike-like horns in the males directed backwards, or backwards and upwards, more or less nearly in the plane of the forehead; facial (and likewise inguinal) glands at least generally present,* and a large lachrymal depression in skull; no bare ear-patch or lateral hoofs; tail medium; foot-structure not definitely known.†

The distributional area includes Western, Central, and Eastern Africa.

These antelopes may be arranged in the following three

* See Pocock, *Proc. Zool. Soc.* 1910, p. 882.

† Pocock, *op. cit.* p. 881.

groups, which have been regarded as of generic value, but are here classed as subgenera:—

A. Skull with a premaxillo-maxillary vacuity; horns relatively long, strongly ridged, with a distinctly upward direction *Nesotragus.*

B. Premaxillo-maxillary vacuity present; horns short, stout, nearly smooth, except at base, inclining backwards nearly in frontal plane..... *Hylarnus.*

C. No premaxillo-maxillary vacuity; horns very small, smooth, inclining backwards in frontal plane..... *Neotragus.*

1. Subgenus **NESOTRAGUS.**

Nesotragus, *Von Düben, Öfv. K. Vet.-Ak. Förhandl.* vol. iii, p. 221, 1847; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 49, 1895.

A maxillo-premaxillary vacuity present in skull; front border of orbit situated above first or second upper molar; hind border of palate opposite hind outer angle of third upper molar; nasals of medium width above; horns relatively long, strongly ridged, with a distinct upward inclination.

The distributional area is restricted to East Africa. The two species are distinguishable as follows:—

A. Size smaller; horns short and slender; tail like back above *N. moschatus.*

B. Size larger; horns longer and stouter; tail blackish above..... *N. livingstonianus.*

I. NEOTRAGUS (NESOTRAGUS) MOSCHATUS.

Nesotragus moschatus, *Von Düben, Öfv. K. Vet.-Ak. Förhandl.* vol. iii, p. 221, 1847; *Sundevall, K. Svenska Vet.-Ak. Handl.* 1845, p. 327, 1847; *Gray, Knowsley Menagerie*, p. 8, 1850, *Proc. Zool. Soc.* 1850, p. 119, *Ann. Mag. Nat. Hist.* ser. 2, vol. viii, p. 137, 1851, *Cat. Ungulata Brit. Mus.* p. 75, 1852, *Cat. Ruminants Brit. Mus.* p. 30, 1872, *Hand-List Ruminants Brit. Mus.* p. 99, 1873; *Temminck, Esquiss. Zool. Guiné*, pp. 192 and 209, 1853; *Sclater, Proc. Zool. Soc.* 1864, p. 101; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, lix, pt. 1, p. 164, 1869; *Huet, Bull. Soc. Acclim.* ser. 4, vol. iv, p. 490, 1887; *Ward, Records of Big Game*, p. 80, 1892; *Matschie, Säugethiere Deutsch-Ostafrika*, p. 119, 1895; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 51, pl. xxviii, 1895; *Bryden, Great and Small Game of Africa*, p. 255, 1899; *Lönnberg, Sjöstedt's Kilimandjaro-Meru Exped., Mamm.* p. 44, 1908, *K. Svenska Vet.-Ak. Handl.* vol. xlviii, no. 5, p. 153, 1912.

Antilope moschata, *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. v, p. 415, 1855.

Nanotragus moschatus, *Brooke*, *Proc. Zool. Soc.* 1872, p. 642; *Flower and Lydekker*, *Study of Mammals*, p. 339, 1891; *True*, *Proc. U.S. Nat. Mus.* vol. xv, 1892; *Lydekker*, *Horns and Hoofs*, p. 217, 1893; *Jackson*, *Big Game Shooting* (*Badminton Library*), vol. i, p. 285, 1894.

Cephalophorus zanzibaricus, *Layard*, *Cat. Mamm. S. African Mus.* p. 71, 1861.

Nesotragus kirchenpaueri, *Pagenstecher*, *Jahrb. Mus. Hamburg*, vol. ii, p. 36, 1885.

Neotragus moschatus, *Lydekker*, *Game Animals of Africa*, p. 185, 1908; *Ward*, *Records of Big Game*, ed. 6, p. 181, 1910.

Suni.

Typical locality Zanzibar.

The type of *Nesotragus*.

Size small; shoulder-height from 13 to 14 inches. General colour typically dull, finely grizzled fawn-grey, with a tinge of rufous, especially on face and sides of neck; a brown patch on tip of nose; throat pale rufous; chin, underparts, and inner sides of legs white; legs below knees and hocks rufous, with the exception of the pasterns, which are brown; tail coloured like back above, whitish below. Basal length of skull 4 inches (101 mm.), maximum breadth $2\frac{1}{4}$ (57 mm.), distance from orbit to muzzle $2\frac{1}{8}$ inches (54 mm.). Good horns measure from $2\frac{1}{2}$ to $3\frac{7}{8}$ inches in length, with a basal girth of from $1\frac{1}{4}$ to $1\frac{7}{8}$ inches.

The range includes small islands in the harbour of Zanzibar and the mainland from British East Africa through the Kilimanjaro district to Mozambique.

The species has been subdivided as follows:—

A. General colour darker—chestnut-brown *N. m. akeleyi.*
B. General colour medium—dull grizzled fawn..... *N. m. moschatus.*
C. General colour light—cinnamon rufous..... *N. m. deserticola.*

A.—Neotragus moschatus moschatus.

Characters as under head of species.

Typical locality Zanzibar.

64. 3. 20. 1. Skin, mounted. Zanzibar Island.
Presented by Capt. J. H. Speke, 1864.

64. 3. 20. 2. Skin and skull, female. Same locality.
Same history.

68. 9. 9. 2–3. Two skulls, with horns. Same locality.
Presented by Sir John Kirk, G.C.M.G., K.C.B., 1868.

74. 4. 20. 3. Skin and skull, female. Same locality.
Same donor, 1874.

74. 4. 28. 1–4. One adult and three immature skulls. Same locality. *Same history.*

74. 4. 28. 4, *a* and *b*. Two female skulls, one immature, with horns. Same locality. *Same history.*

97. 1. 5. 17. Skull, with horns, and skin. Zanzibar. From the collection of Sir Victor Brooke, Bart.
Presented by Sir Douglas Brooke, Bart., 1897.

97. 11. 20. 2. Skin, mounted, and skull, female. Zanzibar.
Purchased (Zoological Society), 1897.

97. 11. 20. 2. Fœtus, in spirit. *Same history.*

B.—Neotragus moschatus akeleyi.

Nesotragus moschatus akeleyi, *Heller, Smithson. Misc. Collect.* vol. lxi, no. 7, p. 1, 1913.

Typical locality Mt. Kenia, British East Africa.

Type in U. S. National Museum.

General colour darker than in typical race—chestnut-brown on back; white of throat divided for half its length by median fulvous band; legs darker, with the pasterns and stripe on front surfaces black.

4. 2. 5. 8. Skull, with horns, and skin. Nyeri, Kenia district, British East Africa.
Presented by S. L. Hinde, Esq., 1904.

4. 2. 5. 9. Skull and skin, female. Same locality.
Same history.

Of the following specimens some may belong to this, and the rest to the next race:—

0. 1. 3. 6. Skull and skin, female. Rogoro, British East Africa. *Presented by C. S. Betton, Esq.*, 1900.

0. 1. 3. 7. Fawn, in spirit. Same locality. *Same history.*

10. 5. 3. 212. Skull, with horns. Aberdare Range, British East Africa; collected by Mr. R. Kemp. *Purchased*, 1910.

4. 12. 6. 14. Skull, with horns. Fort Hall, British East Africa. *Presented by S. L. Hinde, Esq.*, 1904.

10. 4. 20. 7. Skull, with horns. Takaungu, north of Mombasa. *Presented by G. L. Muir, Esq.*, 1910.

0. 2. 1. 42. Skin. Niain Hill, British East Africa; collected by A. J. Mackinder, Esq. *Purchased*, 1900.

0. 2. 1. 43. Skull, with horns, and skin (head-skin separate). Same locality and collector. *Same history.*

3. 2. 16. 1. Skull and skin, female. Roroma, Kikuyu district, British East Africa.

Presented by R. Crawshay, Esq., 1903.

10. 1. 15. 5–6. Two skulls, with horns, and skins. Mombasa, British East Africa.

Presented by S. L. Hinde, Esq., 1910.

C.—Neotragus moschatus deserticola.

Nesotragus moschatus deserticola, *Heller, Smithson. Misc. Collect.* vol. lxi, no. 7, p. 2, 1913.

Typical locality Maji-ya-chumvi, British East Africa.

Type in U. S. National Museum.

General colour considerably lighter than in typical race —cinnamon-rufous, only a little darker on middle line of back; white of throat interrupted only by very narrow fulvous band; legs light fulvous, with dark fuscous pasterns; tail whitish, with middle dorsal line dusky brown.

Some of the specimens entered under heading of preceding race may belong to this form.

II. NEOTRAGUS (NESOTRAGUS) LIVINGSTONIANUS.

Nesotragus livingstonianus, *Kirk, Proc. Zool. Soc.* 1864, p. 657; *Gray, Cat. Ruminants Brit. Mus.* p. 31, 1872, *Hand-List Ruminants Brit. Mus.* p. 100, 1873; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 55, 1895; *Thomas, Ann. Mag. Nat. Hist.* ser. 7, vol. ii, p. 317, 1898; *W. L. Sclater, Fauna S. Africa, Mamm.* vol. i, p. 179, 1900; *Lönnberg, Arkiv Zool.* vol. v, no. 10, p. 4, 1909.

Nanotragus livingstonianus, *Thomas, Proc. Zool. Soc.* 1893, p. 237.

Nesotragus livingstonei, *Lydekker, Great and Small Game of Africa*, p. 255, 1899.

Neotragus livingstonianus, *Lydekker, Game Animals of Africa*, p. 186, 1908; *Ward, Records of Big Game*, ed. 6, p. 182, 1910.

Typical locality Shupanga, Zambesia.

Size larger than in *N. moschatus*, the shoulder-height

measuring from 14 to 15 inches. General colour ranging from rich rufous to grizzled fawn; upper side of tail and at least hind surface of pasterns blackish or black. Basal length of skull $4\frac{3}{8}$ inches (111 mm.), maximum width $2\frac{1}{2}$

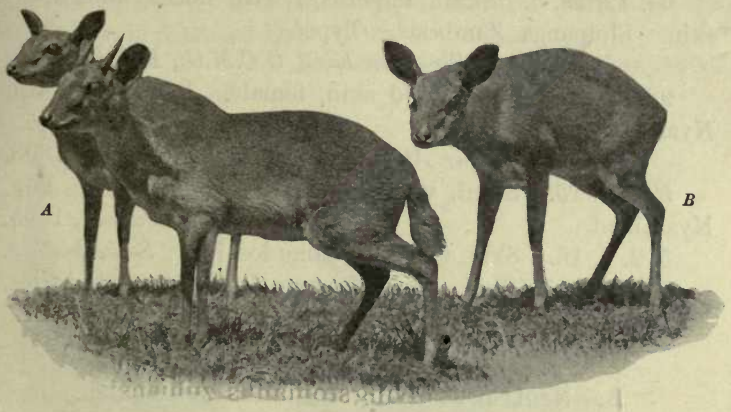


FIG. 16.—LIVINGSTONE'S SUNI (*Neotragus* [*Nesotragus*] *livingstonianus*).* *A*, Male, changing coat, and female. *B*, Female.

(64 mm.), distance from orbit to muzzle $2\frac{3}{8}$ inches (60 mm.). Good horns measure from $4\frac{1}{2}$ to 5 inches in length, with a basal girth of from $1\frac{3}{4}$ to $2\frac{1}{4}$ inches.

The range extends from Mozambique to Zululand.

The two races are distinguished as follows:—

A. General colour deep rufous; pasterns black all round *N. l. livingstonianus.*

B. General colour grizzled fawn; pasterns blackish on hind surface only *N. l. zuluensis.*

A.—Neotragus livingstonianus livingstonianus.

Nesotragus livingstonianus typicus, *Kirby, Great and Small Game of Africa*, p. 256, 1899.

Typical locality Shupanga, Zambesia.

General colour rich rufous, verging on chestnut; pasterns deep black all round; flanks and limbs more fawn-coloured

* The author has unfortunately mislaid the letter accompanying these photographs, so that he is unable to give the name of the correspondent by whom they were sent.

than in *moschatus;* tail darker than back above, approaching black, white below.

The range extends from Zambesia and Mozambique to British Central Africa.

64. 12. 19. 5. Skull, imperfect, with horns, and head-skin. Shupanga, Zambesia. Type.
Presented by Sir John Kirk, G.C.M.G., K.C.B., 1864.

98. 5. 22. 3. Skull and skin, female. Rewanza, South Nyasaland.
Presented by Sir Alfred Sharpe, K.C.M.G., C.B., 1898.

5. 2. 2. 15. Skull, with horns, and skin. Deep Bay, Nyasaland. *Same donor*, 1905.

5. 2. 2. 16. Skin, female. Same locality. *Same history.*

12. 5. 16. 1. Skin. Near Blantyre, British Central Africa.
Presented by Dr. A. H. Barclay, 1912.

B.—Neotragus livingstonianus zuluensis.

Nesotragus livingstonianus zuluensis, *Thomas, Ann. Mag. Nat. Hist.* ser. 7, vol. ii, p. 317, 1898; *Bryden, Great and Small Game of Africa*, p. 259, 1899.

Neotragus livingstonianus zuluensis, *Lydekker, Game Animals of Africa*, p. 186, 1908; *Ward, Records of Big Game*, ed. 6, p. 182, 1910.

Nesotragus zuluensis, *Thomas and Wroughton, Proc. Zool. Soc.* 1907, p. 299.

Typical locality Umkuja (Umkozi) Valley, Zululand.

General colour grizzled fawn, pasterns indistinctly blackish on their hind surfaces only; horns of males somewhat stouter than in typical race.

The range extends from Zululand to Tetté, Zambesia.

93. 2. 1. 1. Skull, with horns, and skin. Umkuja (Umkozi) Valley, Zululand. Type.
Presented by A. H. Neumann, Esq., 1893.

93. 2. 1. 2. Skull, with horns. Same locality.
Same history.

98. 7. 25. 1. Skull and skin, female. Zululand.
Same donor, 1898.

6. 11. 8. 145–146. Two skulls, with horns (fig. 17), and skins, immature. Coguno, Inhambane; collected by Mr. C. H. B. Grant. *Presented by C. D. Rudd, Esq.*, 1906.

6. 11. 8. 147–149. Three skulls and skins, female, one immature. Same locality and collector. *Same history.*

8. 4. 3. 92. Skull, with horns, and skin, immature. Tetta, Zambesia. Same collector. *Same donor*, 1908.

94. 5. 2. 1–2. Horns and imperfect skin. Gungunyana's Country, Portuguese East Africa.

Presented by H. T. Glynn, Esq., 1894.

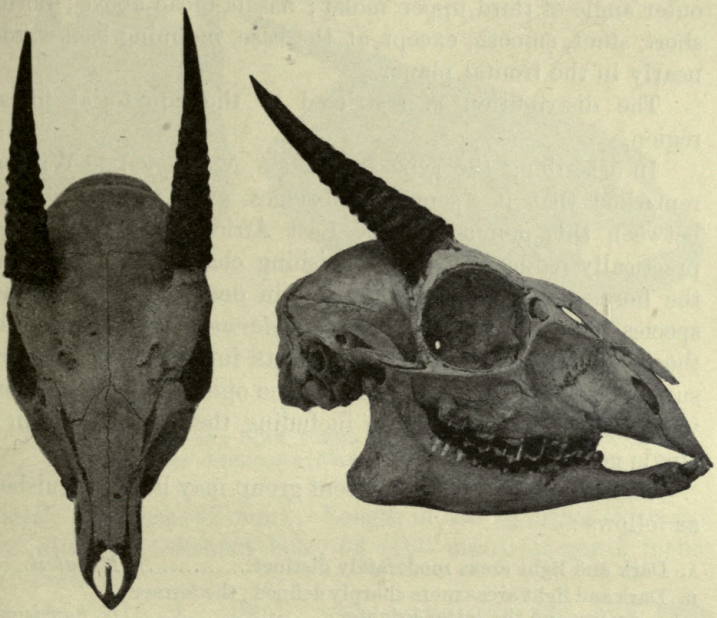


FIG. 17.—FRONT AND SIDE VIEWS OF SKULL AND HORNS OF ZULU RACE OF LIVINGSTONE'S SUNI (*Neotragus* [*Nesotragus*] *livingstonianus zuluensis*).

3. 1. 21. 1. Skull, with horns. Gazaland, Portuguese East Africa. *Presented by Capt. A. N. Campbell*, 1903.

2. 2. 8. 3. Skin, mounted, and skull. Pongola Valley, Zululand.

Presented by Lieut.-Col. Sir David Bruce, K.C.B., 1902.

6. 12. 12. 4. Skin, mounted, and skull. Zululand.

Presented by Allan Cameron, Esq., 1906.

2. Subgenus HYLARNUS.

Hylarnus, *Thomas*, *Ann. Mag. Nat. Hist.* ser. 7, vol. xviii, p. 149, 1906.

Premaxillo-maxillary vacuity present; muzzle relatively short, so that front border of orbit is situated above the last upper premolar; hind border of palate about on line of hind outer angle of third upper molar; nasals broad above; horns short, stout, smooth, except at the base, inclining backwards nearly in the frontal plane.

The distribution is restricted to the equatorial forest region.

In describing the type species (as *Neotragus*) de Winton remarked that it "somewhat bridges over the differences between this genus and the East African *Nesotragus*, and practically reduces the distinguishing characters to those of the horns alone." Thomas, again, in describing the second species and establishing the genus *Hylarnus*, also remarks that these antelopes are in many respects intermediate between sunis and the royal antelope. In the opinion of the present writer, this affords reason for including the whole group in a single genus.

The two species of the present group may be distinguished as follows :—

A. Dark and light areas moderately distinct..... *N. batesi.*
B. Dark and light areas more sharply defined; the former deeper and the latter brighter..... *N. harrisoni.*

III. NEOTRAGUS (HYLARNUS) BATESI.

Neotragus batesi, *de Winton*, *Proc. Zool. Soc.* 1903, vol. i, p. 192, pl. xix; *Lydekker*, *Game Animals of Africa*, p. 184, 1908.
Hylarnus batesi, *Thomas*, *Ann. Mag. Nat. Hist.* ser. 7, vol. xviii, p. 149, 1906; *Bates*, *Proc. Zool. Soc.* 1905, vol. i, p. 77.

Typical locality Cameruns. Type of *Hylarnus*.

Size nearly half as large again as in the royal antelope (*infra*, p. 169). General colour a deeper rufous, with a tendency to dusky, the feet less rufous, and the white of the under-parts less pure; front of face, crown of head, and neck dark smoky brown; back and upper side of tail more rufous

or bay; all the hairs of the dark areas ringed with dark brown and bright bay. Basal length of skull 3¾ inches (95 mm.), maximum width 2 inches (51 mm.), distance from orbit to muzzle 1⅜ (34·5 mm.), length of upper row of cheek-

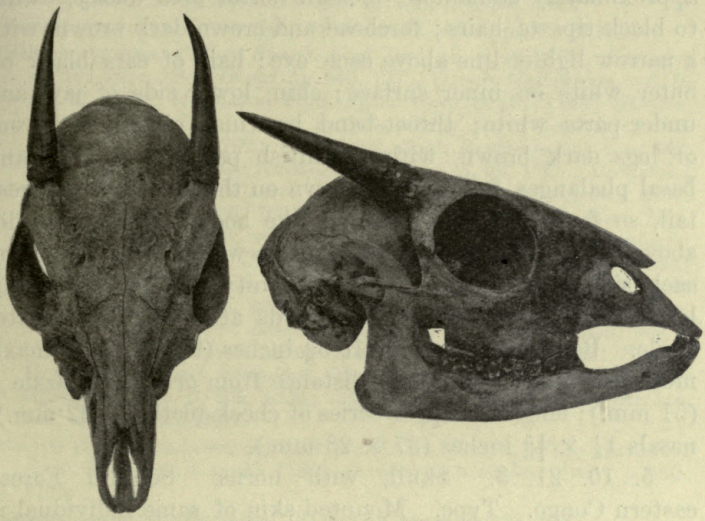


Fig. 18.—Front and Side Views of Skull and Horns of Bates' Dwarf Antelope (*Neotragus* [*Hylarnus*] *batesi*).

teeth 1¼ inches (32 mm.). Length of tail 2¾ inches (65 mm.), of hind-foot, without hoof, 6⅜ (160 mm.), of ear 2 inches (50 mm.).

3. 7. 16. 1. Skull, with horns (fig. 18), and skin. Efulen, Cameruns; collected by G. L. Bates, Esq. Type. *Purchased*, 1903.

3. 7. 16. 2. Skull, female. Same locality and collector. *Same history.*

8. 6. 23. 14. Skin, mounted. Cameruns. *Purchased*, 1908.

IV. NEOTRAGUS (HYLARNUS) HARRISONI.

Hylarnus harrisoni, *Thomas*, *Ann. Mag. Nat. Hist.* ser. 7, vol. xviii, p. 149, 1906.

Neotragus harrisoni, *Lydekker*, *Field*, vol. cviii, p. 510, 1906, *Game Animals of Africa*, p. 181, 1908.

Typical locality Semliki Forest.

Contrast of colour more distinct than in *batesi* (of which this form may be merely a local race); the dark tints being deeper and the light shades brighter. General colour approximately cinnamon; median dorsal area dusky, owing to black tips of hairs; forehead and crown dark brown, with a narrow lighter line above each eye; hair of ears black on outer, white on inner surface; chin, lower side of jaw, and under-parts white; throat-band brownish cinnamon; front of legs dark brown, with a whitish patch on shanks and basal phalanges, followed by brown on the second phalanges; tail, so far as known, coloured like body. Nasals broader above than in *batesi*, expanding into a well-marked angle on each side; premaxillo-maxillary vacuity (in the type skull) larger; and horns inclined upwards at a slightly greater angle. Basal length of skull $3\frac{5}{8}$ inches (96·5 mm.); maximum width $2\frac{1}{16}$ (52 mm.); distance from orbit to muzzle 2 (51 mm.); length of upper series of cheek-teeth $1\frac{1}{4}$ (32 mm.); nasals $1\frac{1}{4} \times \frac{15}{16}$ inches (37 × 23 mm.).

5. 10. 21. 3. Skull, with horns. Semliki Forest, eastern Congo. Type. Mounted skin of same individual in possession of donor.

Presented by Lieut.-Col. J. J. Harrison, 1905.

7. 4. 23. 3. Immature skull, with horns, and skin. Gumbali, Bomakandi Valley, Upper Wellé.

Presented by B. L. Reid, Esq., 1907.

3. Subgenus **NEOTRAGUS.**

For synonymy, see above, p. 158.

No premaxillo-maxillary vacuity in skull; orbital margin as in *Hylarnus;* hind border of palate opposite front edge of third upper molar; horns very short, smooth, and inclining backwards in the plane of the forehead.

The distributional area is restricted to the hinterland of the West Coast, from Liberia to Lagos.

V. NEOTRAGUS PYGMÆUS.

Cervus pusillus guineensis, *Seba*, *Thesaurus*, vol. i, p. 10, pl. xliii, fig. 3, 1734.

Capra pygmæa, *Linn. Syst. Nat.* ed. 10, vol. i, p. 69, 1758.

Moschus pygmæus, *Linn. Syst. Nat.* ed. 12, vol. i, p. 92, 1766.

Antilope pygmæa, *Pallas*, *Spicil. Zool.* fasc. xii, p. 18, 1777; *Zimmermann*, *Spec. Zool. Geogr.* p. 540, 1777, *Geogr. Geschichte*, vol. ii, p. 112, 1780; *Hermann*, *Tabl. Affin. Anim.* p. 107, 1783; *Gmelin*, *Linn.'s Syst. Nat.* vol. i, p. 191, 1788; *Kerr*, *Linn.'s Anim. Kingdom*, p. 318, 1792; *Donndorff*, *Zool. Beyträge*, vol. i, p. 642, 1800; *Link*, *Beyträge Naturgesch.* vol. ii, p. 99, 1795; *Bechstein*, *Uebersicht vierfüss. Thiere*, vol. ii, p. 642, 1800; *Shaw*, *Gen. Zool.* vol. ii, pt. 2, p. 326, 1801; *Desmarest*, *Nouv. Dict. Hist. Nat.* vol. x, p. 251, 1803, vol. xxiv, tabl. p. 32, 1804, *Mammalogie*, vol. ii, p. 465, 1822; *Cuvier*, *Dict. Sci. Nat.* vol. ii, p. 241, 1804; *G. Fischer*, *Zoognosia*, vol. iii, p. 414, 1814; *Afzelius*, *Nova Acta Soc. Upsal.* vol. vii, p. 220, 1815; *Goldfuss*, *Schreber's Säugthiere*, vol. v, p. 1237, 1818; *Desmoulins*, *Dict. Class. Hist. Nat.* vol. i, p. 445, 1822; *Lesson*, *Mon. Mamm.* p. 379, 1827; *H. Smith*, *Griffith's Animal Kingdom*, vol. iv, p. 270, 1827; *J. B. Fischer*, *Synop. Mamm.* p. 469, 1828; *Oken*, *Allgemeine Naturgeschichte*, vol. vii, p. 1360, 1838.

Antilope regia, *Erxleben*, *Syst. Règne Anim.* p. 278, 1777; *Gatterer*, *Brev. Zool.* vol. i, p. 80, 1780; *Boddaert*, *Elenchus Anim.* p. 140, 1785.

Tragulus pygmæus, *Boddaert*, *Elenchus Anim.* p. 131, 1785.

Antilope (Gazella) pygmæa, *Lichtenstein*, *Mag. nat. Freunde*, vol. vi, p. 178, 1814.

Cerophorus (Cervicapra) pygmæa, *Blainville*, *Bull. Soc. Philom.* 1816, p. 75.

Cemus pygmæa, *Oken*, *Lehrbuch Naturgeschichte*, *Zool.* vol. ii, p. 744, 1816.

Antilope (Neotragus) pygmæa, *H. Smith*, *Griffith's Animal Kingdom*, vol. v, p. 349, 1827.

Antilope spinigera, *Temminck*, *Mon. Mamm.* vol. i, p. xxx, 1827 (no description); *Lesson*, *Man. Mamm.* p. 379, 1827; *J. B. Fischer*, *Synop. Mamm.* p. 469, 1829; *Gervais*, *Dict. Sci. Nat.*, *Suppl.* vol. i, p. 263, 1840; *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. iv, p. 457, 1844, vol. v, p. 416, 1855; *Schinz*, *Synop. Mamm.* vol. ii, p. 421, 1845; *Giebel*, *Säugethiere*, p. 320, 1855.

Neotragus pygmæa, *A. Smith*, *S. African Quart. Journ.* vol. ii, p. 218, 1834.

Antilope (Spinigera) spiniger, *Lesson*, *Nouv. Tabl. Règne Anim.*, *Mamm.* p. 178, 1842.

Cephalophorus (?) pygmæus, *Gray*, *List Mamm. Brit. Mus.* p. 163, 1843.

Nanotragus spiniger, *Sundevall*, *K. Svenska Vet.-Ak. Handl.* 1844, p. 191, 1846; *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 164, 1869; *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 137, 1887, *Cat. Mamm. Leyden Mus.* (*op. cit.* vol. xi) p. 164, 1892.

Neotragus pygmæus, *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 231, 1846; *Brooke*, *Proc. Zool. Soc.* 1872, p. 640, pl. liii; *Flower and Lydekker*, *Study of Mammals*, p. 339, 1891; *Lydekker*, *Horns and Hoofs*, p. 216, 1893, *Great and Small Game of Africa*, p. 260, 1899, *Game Animals of Africa*, p. 183, 1908; *Sclater and Thomas*, *Book of Antelopes*, vol. ii, p. 61, pl. xxix, 1895; *Pocock*, *Proc. Zool. Soc.* 1910, p. 867.

Nanotragus regius, *Gray*, *Knowsley Menagerie*, p. 12, 1850.

Nanotragus perpusillus, *Gray*, *Proc. Zool. Soc.* 1850, p. 126, *Ann. Mag. Nat. Hist.* ser. 2, vol. viii, p. 143, 1851, *Cat. Ruminants Brit. Mus.* p. 30, 1872, *Hand-List Ruminants Brit. Mus.* p. 98, 1873.

Calotragus spiniger, *Temminck*, *Esquiss. Zool. Guiné*, pp. 192 and 201, 1853.

Antilope perpusilla, *Huet*, *Bull. Soc. Acclim.* ser. 4, vol. iv, p. 67, 1887.

Cephalophus spiniger, *Büttiköfer*, *Reisebilder Liberia*, vol. ii, p. 379, 1890.

ROYAL ANTELOPE.

Typical locality Guinea.

Type of genus and subgenus.

Size very small; shoulder-height about 10 inches. General colour bright rufous fawn, or bay, browner on head and fore part of back, deeper on hind-quarters, flanks, and sides of neck; the rufous forming a narrow band on lower part of throat which divides the white of the chin and lower surface of jaw and throat from that of the remainder of the under-parts; legs rufous, with the exception of a narrow white line down hind surface of front pair and front surface of hind pair; tail, which measures $2\frac{1}{2}$ inches (60 mm.) in length, exclusive of the terminal tuft, bright rufous above, except at the tip, where, as on the under side, it is white.

Basal length of skull $3\frac{1}{2}$ inches (89 mm.), maximum width $1\frac{7}{8}$ (47 mm.), distance from orbit to muzzle $1\frac{3}{4}$ inches (44 mm.). Horns very small, less than one inch in length, sharply pointed, and quite devoid of rings.

67. 4. 12. 432. Immature specimen in spirit. Guinea. Original of Seba's *Cervus pusillus guineensis*.
Lidth de Jeude Collection, purchased, 1867.

73. 6. 22. 11. Skin, immature, mounted, and skull. Fanti. *Presented by H. F. Blissett, Esq.*, 1873.

78. 7. 16. 7. Skull, with horns, and skin. Fanti.
Purchased, 1878.

97. 1. 5. 18. Skin. Fanti. From the collection of Sir Victor Brooke, Bart.

Presented by Sir Douglas Brooke, Bart., 1897.

88. 5. 17. 4. Immature female, in spirit. Lagos.

Presented by G. E. Dobson, Esq., 1888.

5. 3. 23. 2. Immature skin, female. Owerri, Southern Nigeria. *Presented by E. Dayrell, Esq.*, 1905.

8. 6. 26. 9. Skull, with one horn (fig. 19). Sierra Leone.

Presented by Capt. L. Murray, 1908.

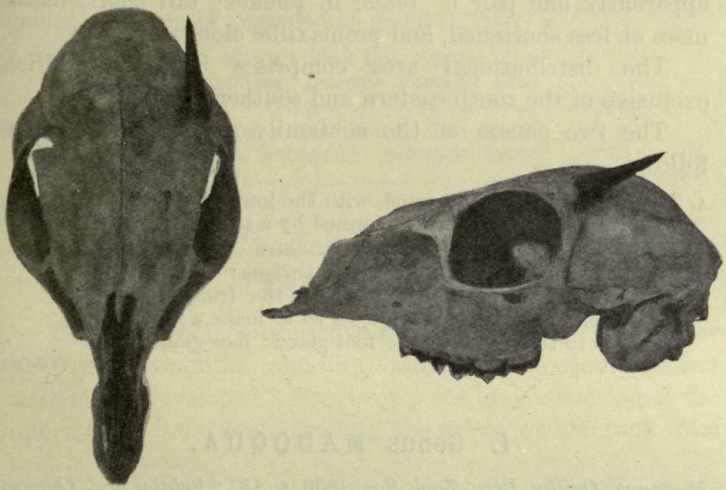


FIG. 19.—FRONT AND SIDE VIEWS OF SKULL WITH ONE HORN, AND WITHOUT LOWER JAW, OF THE ROYAL ANTELOPE (*Neotragus pygmæus*).

8. 8. 6. 11. Immature skin, female. Bibianaha, Gold Coast. *Presented by A. M. Mackilligan, Esq.*, 1908.

10. 12. 23. 4. Skull, with horns, and skin, immature. Same locality. *Presented by Dr. H. G. F. Spurrell*, 1910.

12. 2. 27. 10. Skull, with horns, and skin, immature. Same locality. *Same donor*, 1912.

12. 2. 27. 11–12. Two skulls, and skins, immature and young females. Same locality. *Same history.*

Subfamily ix.—MADOQUINÆ.

Very small antelopes, with short, spike-like horns in the males, distinguished from the *Neotraginæ* by the small size of the muffle, the muzzle being hairy above, almost or quite to the front angles of the nostrils. Face-glands present or absent; foot-glands apparently always present, but inguinal glands wanting; foot-glands more or less tubular, with the skin of the back of the pasterns closely folded at the heels;* apparently one pair of teats, in female; tail short, nasals more or less shortened, and premaxillæ elongated.

The distributional area comprises Ethiopian Africa, exclusive of the south-eastern and southern districts.

The two genera of the subfamily are distinguished as follows:—

A. Hoofs more or less elongated, with the lower surface normal, and the heel-tie† formed by a simple fold of skin; face-glands present..... *Madoqua.*

B. Hoofs short, with pad-like lower surface; heel-tie forming a double fold, of which the front one projects as a kind of ridge, so as to make a kind of lip to the orifice of the foot-gland; face-glands wanting..... *Dorcotragus.*

I. Genus MADOQUA.

Madoqua, *Ogilby, Proc. Zool. Soc.* 1836, p. 137; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 67, 1895; *Pocock, Proc. Zool. Soc.* 1910, p. 876.

Neotragus, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 191, 1846, nec *H. Smith.*

Size very small, females distinctly larger than males; muzzle more or less elongated, so as to form a kind of flexible proboscis, of which the tip is hairy, with the exception of the lower part of the nasal septum; crown of head tufted; ears moderate; small face-glands, of which the small orifice (at least in *M. phillipsi*) forms a vertical crescentic slit, with its concavity looking backwards, situated in the centre of an oval patch of bare skin just in front of

* This term, here and elsewhere, is employed in the sense assigned to it by Pocock (*Proc. Zool. Soc.* 1910, p. 844), namely, the hind part of the supporting area of the hoofs.

† The integument connecting the heels.

the eye; tail short, almost rudimentary; hoofs more or less elongated, with the supporting under surface normal; minute lateral hoofs present; heel-tie in the form of a simple fold of skin; horns of males from half to three-quarters the length of the skull, straight or slightly sinuous, with strong ribs at base. Skull with very long premaxillæ, very short nasals, large nasal aperture, considerable preorbital vacuities, and large, shallow lachrymal pits.

Distribution the same as that of the subfamily.

The genus may be divided into the two following subgenera (frequently regarded as genera), viz.:—

A. Last lower molar without hind lobe; upper line of premaxillæ slanting, scarcely curved; proboscis moderately developed *Madoqua.*

B. Last lower molar with a hind (third) lobe; upper line of premaxillæ S-shaped; proboscis more strongly developed..... *Rhynchotragus.*

1. Subgenus **MADOQUA.**

Synonymy as above.

Hind (third) lobe of last lower premolar wanting; upper line of premaxillæ slanting, scarcely curved; proboscis moderately developed. Frequently the grey colouring of the upper part of the neck dividing the colour of the back from that of the head.

The distributional area is restricted to Somaliland and Abyssinia.

The species may be briefly distinguished as follows:—

A. Back and neck yellowish (fulvous) or rufous fawn; flanks scarcely more rufous.

a. Size larger..... *M. saltiana.*

b. Size smaller.

a'. Grizzling indistinct *M. swaynei.*

b'. Grizzling distinct and finer *M. piacentinii.*

B. Back and neck, or at least neck, grizzled grey; flanks rufous, to a greater or less extent. Size intermediate between *saltiana* and *swaynei.*

a. Flanks rufous *M. phillipsi.*

b. Flanks rufous grey *M. erlangeri.*

C. Dark grey grizzling extending on to shoulders, flanks, and hind-quarters. Size a little less than in *saltiana*..... *M. cordeauxi.*

I. MADOQUA SALTIANA.

Cerophorus (Cervicapra) saltiana, *Blainville*, *Bull. Soc. Philom.* 1816, pp. 75 and 79, *Oken's Isis*, 1819, p. 1096.

Antilope saltiana, *Desmarest*, *Nouv. Dict. Hist. Nat.* vol. ii, p. 192, 1816, *Mammalogie*, vol. ii, p. 465, 1822; *Schinz*, *Cuvier's Thierreich*, vol. i, p. 395, 1821, *Synop. Mamm.* vol. ii, p. 418, 1845; *Desmoulins*, *Dict. Class. Hist. Nat.* vol. i, p. 446, 1822; *Goldfuss*, *Schreber's Säugthiere*, vol. v, p. 1244, 1824; *Cretzschmar*, *Atlas Rüppell's Reise*, pl. xxi, 1826; *Lesson*, *Man. Mamm.* p. 380, 1827; *Lichtenstein*, *Darstellung. Säugeth.* pl. xxi, 1828; *Hemprich and Ehrenberg*, *Symbol. Phys.* pl. vii, 1828; *Fischer*, *Synop. Mamm.* p. 470, 1829; *Owen*, *Proc. Zool. Soc.* 1836, p. 37, *Anat. Vertebrates*, vol. iii, p. 633, 1868; *Oken*, *Allgemeine Naturgeschichte*, vol. vii, p. 1361, 1838; *Laurillard*, *Dict. Univ. Hist. Nat.* vol. i, p. 622, 1841; *Gervais*, *Dict. Sci. Nat. Suppl.* vol. i, p. 268, 1840; *Huet*, *Bull. Soc. Acclim.* ser. 4, vol. iv, p. 68, 1887.

Antilope madoka, *H. Smith*, *Griffith's Animal Kingdom*, vol. iv, p. 271, 1827.

Antilope (Neotragus) madoka, *H. Smith*, *Griffith's Animal Kingdom*, vol. v, p. 350, 1827; *A. Smith*, *S. African Quart. Journ.* vol. ii, p. 218, 1834; *Lesson*, *Hist. Nat. Anim.* vol. x, p. 295, 1836.

Antilope hemprichiana, *Ehrenberg*, *Hemprich and Ehrenberg*, *Symbol. Phys.* text to pl. vii, 1833; *Oken*, *Allgemeine Naturgeschichte*, vol. vii, p. 1362, 1836; *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. iv, p. 455, 1844, vol. v, p. 415, 1855; *Giebel*, *Säugethiere*, p. 319, 1853-55.

Antilope hemprichii, *Rüppell*, *Neue Wirbelth*, *Abyssin.*, *Mamm.* p. 25, 1835.

Neotragus saltianus, *Jardine*, *Naturalists' Libr.*, *Mamm.* vol. iii, pt. 1, p. 229, pl. xxxiii, 1835; *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 231, 1846, ser. 2, vol. viii, p. 138, 1851, *Cat. Osteol. Brit. Mus.* p. 56, 1847, *Knowsley Menagerie*, p. 8, 1850. *Proc. Zool. Soc.* 1850, p. 120, *Cat. Ungulata Brit. Mus.* p. 76, 1852, *Cat. Ruminants Brit. Mus.* p. 40, 1872, *Hand-List Ruminants Brit. Mus.* p. 110, 1873; *Gerrard*, *Cat. Bones Mamm. Brit. Mus.* p. 236, 1862; *Blanford*, *Zool. Abyssinia*, p. 268, 1870; *Flower and Garson*, *Cat. Osteol. Mus. R. Coll. Surg.* pt. ii, p. 268, 1884; *Giglioli*, *Ann. Mus. Genoa*, ser. 2, vol. vi, p. 19, 1888; *Flower and Lydekker*, *Study of Mammals*, p. 238, 1891; *Lydekker*, *Horns and Hoofs*, p. 214, 1893.

Antilope (Neotragus) saltiana, *Lesson*, *Hist. Nat. Anim.* vol. x, p. 295, 1836, *Nouv. Tabl. Règne Anim.*, *Mamm.* p. 178, 1842.

Madoqua hemprichii, *Ogilby*, *Proc. Zool. Soc.* 1836, p. 137.

Madoqua saltiana, *Ogilby*, *Proc. Zool. Soc.* 1836, p. 137; *Gray*, *List Mamm. Brit. Mus.* p. 164, 1843; *Thomas*, *Proc. Zool. Soc.* 1894, p. 328; *Sclater and Thomas*, *Book of Antelopes*, vol. ii, p. 69, pl. xxx, 1895; *Lydekker*, *Great and Small Game of Africa*, p. 265, 1899, *Game Animals of Africa*, p. 188, 1908; *Rothschild*, *Powell-Cotton's Sporting Trip through Abyssinia*, p. 464, 1902; *Ward*, *Records of Big Game*, ed. 6, p. 171, 1910; *Pocock*, *Proc. Zool. Soc.* 1910, p. 876.

Neotragus hemprichianus, *Sundevall*, *K. Svenska Vet.-Ak. Handl.* 1844, p. 191, 1846; *Heuglin*, *Nova Acta Ac. Cæs. Leop.-Car.*

vol. xxx, pt. 2, p. 9, 1863, *Reise Nord-Ostafrika*, vol. ii, p. 107, 1877; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 168, 1869.

Antilope madoqua, *Waterhouse, Cat. Mamm. Mus. Zool. Soc.* p. 40, 1838.

Tragelaphus hemprichii, *Rüppell, Verzeichniss Mus. Senckenberg*, pt. 1, p. 37, 1842.

Calotragus saltianus, *Temminck, Esquiss. Zool. Guiné*, p. 192, 1853.

Cephalophus (Ourebia) saltiana, *Gervais, Hist. Nat. Mamm.* vol. ii, p. 209, 1855.

Nesotragus saltianus, *Rütimeyer, Abh. schweiz. pal. Ges.* vol. iv, p. 53, 1877.

Neotragus hemprichii, *Brehm, Thierleben, Säugethiere*, vol. iii, p. 255, 1880.

DIK-DIK, or BENI ISRAEL.

Typical locality Coast Range of eastern Abyssinia.

The type species.

Size relatively large; shoulder-height 14 or 15 inches. Face rich rufous, and crest very similarly coloured; neck coarsely lined ashy grey, back fulvous or rufous fawn, which becomes but slightly more rufous on flanks; chin and underparts (exclusive of chest) whitish, more or less tinged with fawn; legs pale rufous; tail (as usual) coloured like back. Nasals moderately short; preorbital vacuities large; premaxillæ of moderate length, with the upper profile only slightly curved. Basal length of skull $3\frac{3}{4}$ inches (95 mm.), maximum width $2\frac{1}{4}$ (57 mm.), length from muzzle to orbit $2\frac{1}{8}$ (54 mm.), do. from tip of nasals to tip of premaxillæ $1\frac{1}{4}$ inches (32 mm.).

55. 12. 24. 285. Skull, with horns, and skin. Abyssinia; collected by Dr. Rüppell.

Presented by the Zoological Society, 1855.

69. 10. 24. 3–4. Two skins, male and female. Anseba Valley, Abyssinia; collected by Dr. W. T. Blanford during the Abyssinian Expedition of 1868.

Presented by the Viceroy and Council of India, 1869.

97. 1. 5. 19. Skin, female. Bogosland, Abyssinia. From the collection of Sir Victor Brooke, Bart.

Presented by Sir Douglas Brooke, Bart., 1897.

621, *e*. Skull, female. Abyssinia (?). *Purchased.*

69. 2. 2. 10. Skeleton, female. Abyssinia; collected by W. Jesse, Esq., during the Abyssinian Expedition.

Presented by the Viceroy and Council of India, 1869.

11. 8. 2. 59. Skull, with horns, and skin. Kassala, Sudan. *Presented by Dr. R. E. Drake-Brockman*, 1911.

11. 8. 2. 60. Skin, female. Same locality. *Same history.*

3. 2. 18. 1. Skull, with horns. Gash Valley, Kassala. *Presented by Capt. J. H. Rivers*, 1903.

NOTE.—It is possible that *Antilope hemprichiana*, Ehrenberg, from the Gedam Mountains, Abyssinia, may indicate a distinct race of this species—*M. saltiana hemprichiana;* but no light on this matter is thrown by the specimens in the collection.

II. MADOQUA SWAYNEI.

Madoqua swaynei, *Thomas, Proc. Zool. Soc.* 1894, p. 328; *Hoyos, Zu den Aulikan*, p. 185, 1895; *Swayne, Seventeen Trips through Somaliland*, p. 318, 1895; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 73, 1895; *Elliot, Field Mus. Zool. Pub.* vol. i. p. 113, 1899; *Lydekker, Great and Small Game of Africa*, p. 262, 1899, *Game Animals of Africa*, p. 190, 1908; *Ward, Records of Big Game*, ed. 6, p. 172, 1910; *Drake-Brockman, Mamm. of Somali.* p. 70, 1910, *Proc. Zool. Soc.* 1911, p. 980, pl. lvi, fig. 2.

Typical locality Berbera, northern Somaliland.

Closely allied to *M. saltiana,* but smaller; shoulder-height probably about 13 inches. General colour of back indistinctly grizzled grey, with a suffusion of dull buff or clay-colour; sides little, if at all, more rufous than back; legs pale rufous. Basal length of skull 3 inches (76 mm.); maximum width $1\frac{3}{16}$ (46 mm.); length from muzzle to orbit $1\frac{9}{16}$ (40 mm.); do. from tip of nasals to tip of premaxillæ $1\frac{1}{16}$ inches (26 mm.).

The range of this species according to Drake-Brockman is probably limited to the area between latitudes 5° and 8° or 9° N., in parts of which it is found in association with *M. phillipsi.*

94. 2. 21. 15. Skin. Berbera; collected by Lieut.-Col. H. G. C. Swayne. Type. *Presented by Dr. P. L. Sclater*, 1894.

94. 2. 21. 14. Skin. Same locality and collector. *Same history.*

94. 2. 21. 20. Skull, with horns. Same locality and collector. *Same history.*

94. 4. 9. 3. Skull, with horns, and skin. Milmil, Somaliland. *Presented by Dr. Donaldson Smith*, 1894.

94. 4. 9. 4. Skin. Forty miles south of Berbera.
Same history.

9. 6. 1. 43–46. Four skins. Webi Valley, Somaliland.
Presented by Dr. R. E. Drake-Brockman, 1909.

9. 6. 1. 47. Skin. Hara Oda, Somaliland. *Same history.*

III. MADOQUA PIACENTINII.

Madoqua piacentinii, *Drake-Brockman*, *Proc. Zool. Soc.* 1911, p. 981, pl. lvi, fig. 1.

Typical locality Ghagaburis, near Obbia, Italian Somaliland.

Similar in size to *M. swaynei*, but with the grey grizzling of the back fine and distinct, without a buff suffusion. "The neck is fairly grizzled all round, the pale throat and buff chin-patches being completely cut off from the pinkish buff of the chest. Apart from the fine grey grizzling, the most distinctive patches are about the head. There is a bright rufous diamond-shaped nose-patch, which stands out conspicuously on the grizzled head, while the terminal part of the long hairs of the crest is of dull creamy buff. The hairs of the crest, however, vary so much [in colour] in dik-diks, that little importance can be attached to this feature" (Drake-Brockman).

11. 8. 2. 51. Skull, with horns, and skin. Ghagaburis, Italian Somaliland. Type.
Presented by Dr. R. E. Drake-Brockman, 1911.

11. 8. 2. 55. Skull, with horns, and skin. Same locality.
Same history.

IV. MADOQUA PHILLIPSI.

Madoqua phillipsi, *Thomas*, *Proc. Zool. Soc.* 1894, p. 327; *Hoyos, Zu den Aulikan*, p. 185, 1895; *Swayne, Seventeen Trips through Somaliland*, p. 318, 1895; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 175, pl. xxxi, fig. 2, 1895; *Elliot, Field Mus. Zool. Pub.* vol. i, p. 115, 1897; *Lydekker, Great and Small Game of Africa*, p. 262, 1899, *Game Animals of Africa*, p. 189; *Beddard, Proc. Zool. Soc.* 1909, p. 188; *Ward, Records of Big Game*, ed. 6, p. 172, 1910; *Pocock, Proc. Zool. Soc.* 1910, p. 876; *Drake-Brockman, Mamm. of Somali.* p. 68, 1910, *Proc. Zool. Soc.* 1911, p. 978, pl. lv, fig. 3.

Typical locality Dobwein, northern Somaliland.

A variable species, somewhat larger in size than average

examples of *M. swaynei*. Typically head, neck, and back grizzled grey (the neck being always of this colour); rufous of crown and back of ears deeper and richer than in *M. saltiana;* shoulders and flanks (or at least a band on the flanks) rich bright rufous, markedly different from the faint rufous of those of *saltiana;* rufous encroaching considerably on chest, but chin and rest of under-parts whitish (as usual); legs rich rufous. Basal length of skull $3\frac{1}{4}$ inches (82 mm.); maximum width $2\frac{1}{16}$ (52 mm.); length from muzzle to orbit $1\frac{13}{16}$ (46 mm.); do. from tip of nasals to tip of premaxillæ $1\frac{3}{16}$ inches (29 mm.).

The following three races of this species are recognised, viz.:—

A. Hair of medium length; flanks bright rufous or cinnamon; back grizzled grey..... *M. p. phillipsi.*

B. Hair longer, and coat rougher; back darker, looking dark reddish brown; and neck alone grizzled grey..... *M. p. harrarensis.*

C. Hair shorter and scantier, and coat sleeker; general colour grizzled grey, with only a narrow rufous flank-band *M. p. gubanensis.*

A.—Madoqua phillipsi phillipsi.

Madoqua phillipsi, *Drake-Brockman, Proc. Zool. Soc.* 1911, p. 978, pl. lv, fig. 3.

Typical locality Dobwein, northern Somaliland.

Hair of medium length; flanks bright rufous or cinnamon; back grizzled grey. Drake-Brockman writes that in the western part of the Haud the flanks in this dik-dik "are so red that at a short distance it looks rufous all over; this is in marked contrast to the coast variety [*M. p. gubanensis*], which looks quite grey."

88. 6. 20. 7. Skull, with horns, and skin, in spirit. Dobwein, forty miles southward of Berbera, Somaliland. Type. *Presented by E. Lort Phillips, Esq.*, 1888.

88. 6. 20. 8. Skin, in spirit. Same locality. *Same history.*

93. 12. 1. 8–9. Two skulls, with horns. Same locality; collected by Lieut.-Col. H. G. C. Swayne.
Presented by Dr. P. L. Sclater, 1893.

94. 2. 21. 19. Skull, with horns. Same locality and collector. *Same history.*

98. 6. 9. 17. Skull and skin, female. Somaliland. *Presented by R. McD. Hawker, Esq.*, 1898.

11. 8. 2. 58. Skull, with horns, and skin. Ogo, Somaliland. *Presented by Dr. R. E. Drake-Brockman*, 1911.

86. 11. 19. 2. Skull, with horns, and skin, immature. Somaliland. *Presented by E. Lort Phillips, Esq.*, 1886.

99. 12. 28. 3–4. Two female skulls and skins, one immature. Somaliland. *Presented by C. V. A. Peel, Esq.*, 1899.

0. 3. 27. 24–25. Skull, with horns, and two skins. Sayer Valley, near Gessima, Somaliland. *Presented by the Lord Delamere*, 1900.

94. 2. 21. 12–13. Two skins. Berbera. *Presented by Lieut.-Col. H. G. C. Swayne*, 1894.

95. 10. 17. 1. Skeleton, with horns, mounted, and head-skin. Berbera. *Presented by Capt. T. Cox*, 1895.

95. 10. 17. 2–3. Two skeletons, with horns, and head-skins. Same locality. *Same history.*

5. 11. 5. 8–9. Two skulls, with horns, and skins. Khansa Jungle, Somaliland. *Presented by Dr. R. E. Drake-Brockman*, 1905

10. 10. 3. 35–36. Two skulls, with horns, and skins. Golis Foot-hills, Somaliland. *Purchased*, 1910.

10. 10. 3. 37. Skull and skin, female. Same locality. *Same history.*

85. 11. 16. 3. Skull, with horns, and (?) skin. Gerbatir, northern Somaliland; collected by Herr J. Menges. *Purchased*, 1885.

B.—Madoqua phillipsi harrarensis.

Madoqua harrarensis, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1905, p. 87; *Lydekker, Game Animals of Africa*, p. 190, 1908.

Madoqua phillipsi harrarensis, *Drake-Brockman, Proc. Zool. Soc.* 1911, p. 979, pl. lv, fig. 2.

Typical locality Harrar, Abyssinia.

Type in collection of Dr. O. Neumann.

Hair longer and coat rougher than in typical race; back darker, so as to appear deep reddish brown in life, the neck alone being grizzled grey. In the original description this race (species) is stated to resemble *M. p. phillipsi* in the uniformly rufous flanks, but to differ by the absence of the

ashy grey and dark brown grizzling of the hairs of the back, the tips of which are alone ringed with isabelline rufous and dark brown, so that the whole tone of the back is rufous fawn. Drake-Brockman, in comparing this race with the typical *phillipsi*, observes that it is darker, "and in its wild state looks of a dark red-brown colour."

4. 5. 9. 31. Skull and skin, female. Harrar.
Presented by Major H. N. Dunn, 1904.



FIG. 20.—FRONT AND SIDE VIEWS OF SKULL AND HORNS OF HARRAR RACE OF PHILLIPS' DIK-DIK (*Madoqua phillipsi harrarensis*).

4. 5. 9. 32. Skin. Thirty-five miles east of Harrar.
Same history.

6. 11. 1. 69. Skull, with horns, and skin. Harrar; collected by Mr. P. Japhira.
Presented by W. N. McMillan, Esq., 1906.

11. 8. 2. 48. Skin, imperfect. Between Harrar and Jig-jigga. *Presented by Dr. R. E. Drake-Brockman*, 1911.

11. 8. 2. 52. Skin, imperfect. Daggar, near Jig-jigga.
Same history.

0. 3. 3. 25. Skull, female. Abyssinia.
Presented by the Lord Lovat, 1900.

96. 10. 8. 1–2. Two skulls, with horns, and skins. South of the Haud, Somaliland.

Presented by Capt. G. L. F. Leathes, 1896.

96. 10. 8. 3. Skull and skin, immature female. Same locality. *Same history.*

94. 4. 9. 1–2. Two skulls, with horns (fig. 20), and skins. Milmil, Somaliland.

Presented by Dr. Donaldson Smith, 1904.

C.—Madoqua phillipsi gubanensis.

Madoqua phillipsi gubanensis, *Drake-Brockman*, *Ann. Mag. Nat. Hist.* ser. 8, vol. iv, p. 49, 1909, *Mamm. Somali.* p. 68, 1910, *Proc. Zool. Soc.* 1911, p. 479, pl. lv, fig. 1.

Typical locality Hul Gabobai, Golis Foothills, thirty-five miles south of Berbera, Somaliland.

Hair shorter and scantier, and coat sleeker than in typical race; general colour grizzled grey, with only a narrow rufous flank-band.

9. 6. 1. 52. Skin. Hul Gabobai. Type.

Presented by Dr. R. E. Drake-Brockman, 1909.

94. 2. 21. 31. Skin. Berbera.

Presented by Lieut.-Col. H. G. C. Swayne, 1894.

98. 6. 9. 16. Skull, with horns, and skin. Aractais, Somaliland. *Presented by R. McD. Hawker, Esq.*, 1898.

10. 10. 3. 38–40. Three skulls, with horns, and skins, two immature. Somaliland.

Presented by Dr. R. E. Drake-Brockman, 1910.

10. 10. 3. 41–43. Three skulls and skins, female, one immature. Somaliland. *Same history.*

11. 8. 2. 49. Skull, with horns, and skin. Bulhar, Somaliland. *Same donor*, 1911.

11. 8. 2. 50. Skull, with horns, and skin. Eil Gori, twenty miles north of Zeila, Somaliland. *Same history.*

The following specimens may indicate another race of the present species:—

11. 8. 9. 21–30. Ten skulls, with horns, and skins. Ed Hur, near Obbia, Italian Somaliland.

Presented by Dr. R. E. Drake-Brockman, 1911.

11. 8. 9. 31–32. Two skulls, with horns, and skins, immature. Same locality. *Same history.*

11. 8. 9. 33–41. Eight skulls and skins, female, some immature. Same locality. *Same history.*

V. MADOQUA ERLANGERI.

Madoqua erlangeri, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1905, p. 88; *Lönnberg, Arkiv Zool.* vol. iv, No. 3, p. 2, 1907; *Lydekker, Game Animals of Africa*, p. 190, 1908.

Rhynchotragus erlangeri, *Drake-Brockman, Proc. Zool. Soc.* 1911, p. 983, errorim.

Typical locality Ennia Gallaland, at Sheik Hussein, on the left bank of the Webi River.

Type in collection of Dr. O. Neumann.

A small form, apparently inferior in size to *M. swaynei*, described as similar in dorsal colouring to *M. phillipsi harrarensis*, but with the flanks rufous grey in place of rufous, owing to the hairs being red only at the tips or ringed with bright rufous and dark; colour of back passing gradually into that of flanks; legs dark rufous; head rufous, without grizzling. In general appearance this dik-dik is compared to a highly rufous *M. swaynei*.

No specimen in collection.

VI. MADOQUA CORDEAUXI.

Madoqua cordeauxi, *Drake-Brockman, Ann. Mag. Nat. Hist.* ser. 8, vol. iv, p. 49, 1909.

Rhynchotragus cordeauxi, *Drake-Brockman, Proc. Zool. Soc.* 1911, p. 983, errorim.

Typical locality near Dirri Dawa, in the Dinikil district of Abyssinia.

Somewhat smaller than *M. saltiana*, but larger than the other Somali members of typical subgenus; shoulder-height about 13 inches. Darkish grey grizzling extending on to shoulders, flanks, and hind-quarters; back suffused with reddish fawn; chest somewhat reddish buff, this colour extending but little on throat, in this respect differing markedly from *M. phillipsi;* legs similar to those of that

species, but darker towards shoulders and haunches; crest dull rufous, grizzled with yellow, rufous, and black in front. Basal length of skull $3\frac{9}{16}$ inches (90 mm.), maximum width $2\frac{1}{8}$ inches (53 mm.).

9. 6. 1. 50. Skull, with horns, and skin. Dirri Dawa, Abyssinia. Type.

Presented by Dr. R. E. Drake-Brockman, 1909.

9. 6. 1. 49. Skull, with horns, and skin. Same locality.

Same history.

9. 6. 1. 51. Skull, with horns, and skin. Same locality.

Same history.

2. Subgenus **RHYNCHOTRAGUS.**

Rhynchotragus, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1905, p. 88.

Last lower molar with a hind (third) lobe, which may, however, be very small; upper line of premaxillæ S-shaped; nasals shorter than in typical subgenus; proboscis strongly developed. Typically the colouring of the back not separated from that of the head by a third colour. The distributional area is co-extensive with that of the subfamily.

The following is a tentative key to the species of the group:—

A. Nasals medium, their tips on a level with front edge of anterior premolars, and distant about $1\frac{5}{16}$ inches from tips of premaxillæ.
 a. Size large.
 a'. Nasals moderately broad *M. damarensis.*
 b'. Nasals broader..... *M. cavendishi.*
 b. Size smaller.
 a'. Back yellowish grey or bright grizzled fulvous..... *M. kirki.*
 b'. Back bright rufous tawny *M. thomasi.*

B. Nasals shorter, their tips about on level with hind border of penultimate premolar, and distant about $1\frac{1}{8}$ inches from tips of premaxillæ (in *guentheri*).
 a. Face uniformly coloured; nasals moderately short *M. guentheri.*
 b. Lower part of face profusely spotted with white; nasals very short *M. nasoguttata.*

VII. MADOQUA (RHYNCHOTRAGUS) DAMARENSIS.

Neotragus damarensis, *Günther*, *Proc. Zool. Soc.* 1880, p. 20; *Flower and Lydekker*, *Study of Mammals*, p. 338, 1891; *Lydekker*, *Horns and Hoofs*, p. 215, 1893.

Cephalophus hemprichianus, *Jentink*, *Notes Leyden Mus.* vol. ix, p. 172, 1887.

Nanotragus damarensis, *Nicolls and Eglington*, *Sportsman in S. Africa*, p. 56, 1902.

Madoqua damarensis, *Thomas*, *Proc. Zool. Soc.* 1894, p. 329; *Sclater and Thomas*, *Book of Antelopes*, vol. ii, p. 79, 1895; *Lydekker*, *Great and Small Game of Africa*, p. 262, 1899; *W. L. Sclater*, *Fauna S. Africa*, *Mamm.* vol. i, p. 182, 1900; *Lönnberg*, *Arkiv Zool.* vol. iv, no. 3, p. 2, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 175, 1910.

Rhynchotragus damarensis, *O. Neumann*, *Sitzber. Ges. nat. Freunde*,* 1905, p. 8.

Madoqua (Rhynchotragus) damarensis, *Lydekker*, *Game Animals of Africa*, p. 191, 1908.

Typical locality Damaraland.

Imperfectly known. Size relatively large. General colour greyish on crown and middle line of back, pale rufous, or buffish cinnamon, on backs of ears, flanks, and legs; crest mixed with black; skull apparently very similar to that of *M. kirki*, but perhaps larger.† Maximum width of skull (female) $2\frac{3}{16}$ inches (55 mm.); length from front of orbit to tip of muzzle $2\frac{1}{4}$ (57 mm.); do. from back of orbit to same $3\frac{7}{16}$ inches (87 mm.).

The range includes southern Angola.

The two races are distinguished as follows:—

A. Colour duller; under-parts white *M. d. damarensis.*
B. Colour brighter; under-parts buffish cinnamon *M. d. variani*

A.—Madoqua damarensis damarensis.

Typical locality Damaraland.

General colour-tone dull; under-parts white.

79. 12. 25. 1. Skull and skin, female. Omaruru, Damaraland. Type. *Purchased*, 1879.

* Although Neumann does not actually use this name, he includes all the members of the *kirki* group of Thomas (*P.Z.S.* 1894) in *Rhynchotragus*. Lönnberg appears somewhat confused, as he includes *damarensis* in *Madoqua* and yet refers to it as a member of one of the groups of *Rhynchotragus*.

† Described from a female specimen, which would be larger than a male skull.

B.—Madoqua damarensis variani.

Rhynchotragus damarensis variani, *Drake-Brockman*, *Ann. Mag. Nat. Hist.* ser. 8, vol. xii, p. 481, 1913.

Typical locality Lobito, Angola.

General colour brighter; pale buffish cinnamon of flanks extending on to chest and abdomen, instead of passing there into white; grizzling of back and of bases of long crest-hairs darker.

13. 11. 5. 1. Skin. Lobito, Angola. Type. *Presented by H. F. Varian, Esq.*, 1913.

0. 11. 12. 1. Skin, young. Coporole Valley, Angola. Paratype. *Presented by G. W. Penrice, Esq.*, 1900.

VIII. MADOQUA (RHYNCHOTRAGUS) CAVENDISHI.

Madoqua cavendishi, *Thomas*, *Proc. Zool. Soc.* 1898, p. 278; *Lydekker*, *Great and Small Game of Africa*, p. 262, 1899.

Rhynchotragus cavendishi, *Lönnberg*, *Arkiv Zool.* vol. iv, no. 3, p. 2, 1907.

Madoqua (Rhynchotragus) cavendishi, *Lydekker*, *Game Animals of Africa*, p. 193, 1908.

Madoqua langi, *Allen*, *Bull. Amer. Mus. Nat. Hist.* vol. xxvi, p. 153, 1909; *Lydekker*, *Game Animals of Africa*, *Suppl.* p. 10, 1911.

Typical locality Lake Rudolf district.

Typically the size fully as large as (if not larger than) that of *M. damarensis*. Nasals broader than those of the latter, and also differing somewhat in shape; nasal aperture large, wider and higher than in either *damarensis* or *kirki*; premaxillæ not touching each other in the middle line above (as they do in type of *damarensis*), and reaching posteriorly to nasals, with which they articulate broadly. General colour typically dark fawn (much darker than in *damarensis*) on anterior part of back, becoming greyer (by the loss of the fulvous suffusion) posteriorly, and passing into ashy grey on sides of buttocks; shoulders, an ill-defined line on flanks, and fronts of legs sandy rufous; hairs of crest suffused throughout with dull fulvous. For skull-dimensions, see below.

The species has been divided into the two following races:—

A. Size large *M. c. cavendishi.*
B. Size smaller *M. c. minor.*

A.—Madoqua cavendishi cavendishi.

Typical locality Lake Rudolf district.

Size large. General characters those given under head of species. Basal length of immature male skull $4\frac{1}{8}$ inches



Fig. 21.—Front and Side View of Skull and Horns of Cavendish's Dik-Dik (*Madoqua* [*Rhynchotragus*] *cavendishi*).

(103·5 mm.); maximum width $2\frac{5}{16}$ inches (58 mm.); length from orbit to tip of premaxilla $2\frac{5}{16}$ inches (58 mm.).*

98. 4. 28. 4. Skull, retaining milk dentition, with horns, and skin. Lake Rudolf district, British East Africa. Type. *Presented by H. S. H. Cavendish, Esq.*, 1898.

4. 6. 5. 3–4. Two skulls and skins, female, one immature.

* These dimensions are about equal to those of the type adult female skull of *M. damarensis*.

Lake Elmenteita district, British East Africa. Topo-types of *M. langi*.

Presented by Sir F. J. Jackson, K.C.M.G., C.B., 1904.

99. 2. 3. 1. Skin, mounted, and skull. Lanjoro, Athi Valley, British East Africa.

Presented by the Lord Delamere, 1899.

2. 4. 5. 6. Skull, female. Kedong Valley, British East Africa. *Presented by C. S. Betton, Esq.*, 1902.

2. 4. 5. 7. Skull, immature, female. Ngomini, British East Africa. *Same history.*

9. 6. 30. 1. Skull, with horns (fig. 21), and skin. Ituri Forest, Congo. *Presented by G. G. Longden, Esq.*, 1909.

B.—Madoqua cavendishi minor.

Rhynchotragus cavendishi minor, *Lönnberg, Ann. Mag. Nat. Hist.* ser. 8, vol. ix, p. 65, 1912, *K. Svenska Vet.-Ak. Handl.* vol. xlviii, no. 5, p. 158, 1912.

Typical locality Guaso-nyiro Valley, below Chanler's Falls, British East Africa.

Size considerably smaller than in typical race. General colour grizzled yellowish grey, with dark brown tips and buffish yellow subterminal rings to the hairs; neck paler (less yellow) grey with whitish rings to hairs; flanks less grizzled and paler than back; hind part of buttocks and caudal region ashy grey; under-parts suffused with buffish, but middle of belly, like inner sides of hind-legs, white; legs and middle of face fulvous buff; sides of face paler; eye-mark conspicuous. Basal length of skull $3\frac{11}{16}$–$3\frac{3}{4}$ inches (92–94 mm.); maximum width 2–$2\frac{3}{16}$ (50–54 mm.); length of upper series of cheek-teeth about $1\frac{3}{8}$ inches (34–35 mm.).

12. 11. 21. 1. Head, mounted. Guaso-nyiro Valley, east of Chanler's Falls, British East Africa.

Presented by F. C. Selous, Esq., 1912.

12. 11. 21. 2. Head-skin. Same locality. *Same history.*

IX. MADOQUA (RHYNCHOTRAGUS) KIRKI.

Neotragus kirki, *Günther, Proc. Zool. Soc.* 1880, p. 17; *Thomas, ibid.* 1885, p. 222; *Johnston, Kilimanjaro*, p. 355, 1860; *Hunter, Willoughby's Big Game of E. Africa*, p. 290, 1889; *W. L. Sclater, Cat. Mamm. Ind. Mus.* pt. ii, p. 166, 1891; *Flower*

and Lydekker, Study of Mammals, p. 338, 1891; *Ward, Records of Big Game*, p. 79, 1892; *Lydekker, Horns and Hoofs*, p. 215, 1893; *Jackson, Big Game Shooting* (*Badminton Libr.*), vol. i, pp. 285 and 310, 1894; *Matschie, Säugeth. Deutsch-Ostafrika*, p. 118, 1895.

Madoqua kirki, *Thomas, Proc. Zool. Soc.* 1894, p. 328; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 83, 1895; *Lydekker, Great and Small Game of Africa*, p. 262, 1899; *Drake-Brockman, Mamm. of Somali.* p. 71, 1910; *Ward, Records of Big Game*, ed. 6, p. 174, 1910.

Rhynchotragus kirki, *Lönnberg, Arkiv Zool.* vol. iv. no. 3, p. 2, 1907; *Drake-Brockman, Proc. Zool. Soc.* 1911, p. 983.

Madoqua (Rhynchotragus) kirki, *Lydekker, Game Animals of Africa*, p. 192, 1908.

Typical locality Brava, Italian Somaliland.

Typically, at any rate, smaller than either of the two preceding species. Proboscis not excessively elongated, nor nasals excessively shortened; tip of nasals about on level of front edge of anterior premolar, and separated by an interval of about $1\frac{5}{16}$ inches (32 mm.), from tips of premaxillæ; nasal aperture of skull, as compared with that of *cavendishi*, small, and nasals narrower; general colour ranging from coarsely grizzled yellowish grey or greyish fawn to bright grizzled fulvous, with rufous on sides of neck; limbs rufous, of varying intensity, or deep reddish fulvous. For skull-dimensions, see below, where the distinctive characteristics of the two races are given.

The range extends from Somaliland to British East Africa and Kilimanjaro.

Three races, distinguished as follows, have been described:—

A. Size smaller..... *M. k. kirki.*

B. Size larger.

a. Colour darker..... *M. k. hindei.*

b. Colour lighter..... *M. k. nyikæ.*

A.—Madoqua kirki kirki.

Madoqua kirki typica, *Lydekker, Game Animals of Africa*, p. 192, 1908.

Typical locality Brava, Italian Somaliland.

Size relatively small; general colour of back dull yellowish grey; limbs rufous, of varying shade. Basal

length of skull $3\frac{3}{4}$ inches (95 mm.), maximum width $1\frac{5}{16}$ (48·5 mm.); length from muzzle to orbit 2 (50 mm.); do. to tip of nasals $1\frac{1}{4}$ inches (32 mm.).

79. 12. 18. 2. Head, mounted, and skull. Brava, Italian Somaliland. Type.

Presented by Sir John Kirk, G.C.M.G., K.C.B., 1879.

79. 12. 18. 1. Skull and skin, female. Same locality. Co-type. *Purchased*, 1879.

81. 9. 22. 1. Skin, mounted, and skull. Manda, Lamu, British East Africa. *Purchased*, 1881.

81. 9. 22. 2. Skull, with horns, and skin. Same locality. *Same history.*

87. 3. 9. 5. Skull, with horns. Lamu.

Presented by J. G. Haggard, Esq., 1887.

89. 8. 3. 3. Skull, with horns, and skin. Foot of Mount Kilimanjaro, East Africa.

Presented by H. C. V. Hunter, Esq., 1889.

89. 8. 3. 4. Skull, with horns, immature. Same locality. *Same history.*

99. 11. 18. 1. Skull, with horns, and skin, immature. Kismayu, Jubaland, East Africa.

Presented by Major E. J. Harrison, 1899.

13. 8. 2. 4–5. Two skulls and skins, male and female. Jubaland. *Presented by I. N. Dracopoli, Esq.*, 1913.

B.—Madoqua kirki nyikæ.

Rhynchotragus kirki nyikæ, *Heller, Smithson. Misc. Collect.* vol. lxi, no. 3, p. 3, 1913.

Typical locality Ndi, near Voi, British East Africa.

Type in U. S. National Museum.

Very similar to, but larger than, typical race, equalling in this respect *hindei*, from which it differs by its lighter colour; the back being ochre-tawny, passing into buff on flanks, and into white beneath. A vermiculation on back produced by dusky rings on the hairs.

No specimen in the collection has been definitely referred to this race.

C.—Madoqua kirki hindei.

M adoqua kirki hindei, *Thomas*, *Ann. Mag. Nat. Hist.* ser. 7, vol. x, p. 242, 1902; *Lydekker*, *Game Animals of Africa*, p. 192, 1908.

Rhynchotragus hindei, *O. Neumann*, *Sitzber. Ges. nat. Freunde*, 1905, p. 89.

Rhynchotragus kirki hindei, *Lönnberg*, *Arkiv Zool.* vol. iv, no. 3, p. 2, 1907.

Typical locality Kitui district, British East Africa.

Rather larger than the typical race. General colour more fulvous, especially the middle line of the back, which is bright grizzled fulvous; legs deep reddish fulvous; white eye-markings distinct; long crest-hairs deep reddish fulvous, with black tips; outer side of front margins of ears edged with black. Nasals more bent down and laterally compressed than in typical race, with a short articulation to upper ends of premaxillæ.

The following dimensions, in millimetres, are given by Thomas of the type female skull:—greatest length 109; zygomatic width 53·5; length from tip of muzzle to tip of nasals 34; nasals 18·7 × 16; muzzle to orbit 52·5; width of brain-case 43·7; muzzle to front of anterior premolar 24.

0. 9. 4. 2. Skull and skin, female. Kitui district, British East Africa. Type. *Presented by S. L. Hinde, Esq.*, 1900.

98. 10. 28. 1. Skull, with horns, and skin. Machakos, British East Africa. *Same donor*, 1898.

98. 1. 5. 15. Skull, with horns, and skin. Tsavo Valley, Machakos. *Same history.*

10. 1. 15. 1–3. Three skulls, with horns, and skins. Tsavo, Taru Desert, British East Africa. *Same donor*, 1910.

10. 1. 15. 4. Skin. Same locality. *Same history.*

4. 2. 19. 1. Skin. North of Athi River, Ukamba, British East Africa. *Presented by Dr. R. E. Drake-Brockman*, 1904.

4. 6. 5. 5. Skin, female. Simba Valley, British East Africa. *Presented by Sir F. J. Jackson, K.C.M.G., C.B.*, 1904.

4. 6. 5. 6. Skull and skin, immature. Same locality. *Same history.*

X. MADOQUA (RHYNCHOTRAGUS) THOMASI.

Rhynchotragus thomasi, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1905, p. 89; *Lönnberg, Arkiv Zool.* vol. iv, no. 3, p. 2, 1907.

Madoqua (Rhynchotragus) thomasi, *Lydekker, Game Animals of Africa*, p. 192, 1908.

Typical locality Uniamwesi district, to the south of the Victoria Nyanza; the range also extending into Masailand.

Type in the collection of Dr. O. Neumann.

Described as being closely related to *M. kirki hindei*, but distinguished by the more uniformly rufous tawny of the whole of the upper-parts; only the middle line of the back being dark rufous in the latter, while the sides are olive or fulvous. Hairs of back ringed near tips with red and black; but the black disappearing on the sides, so that hairs of shoulders and flanks are wholly rufous; head also uniformly rufous, except on occiput, where black-tipped hairs make their appearance.

Of this duiker, which may be only a race of *kirki*, there are no specimens in the collection.

XI. MADOQUA (RHYNCHOTRAGUS) GUENTHERI.

Madoqua guentheri, *Thomas, Proc. Zool. Soc.* 1894, p. 324, 1900, p. 804; *Hoyos, Zu den Aulihan*, p. 185, 1895; *Swayne, Seventeen Trips to Somaliland*, p. 318, 1695; *Thomas and Sclater, Book of Antelopes*, vol. ii, p. 89, pl. xxxi, fig. 1, 1895; *Elliot, Field Mus. Zool. Pub.* vol. i, p. 117, 1897; *Lydekker, Great and Small Game of Africa*, p. 262, 1899; *Ward, Records of Big Game*, ed. 6, p. 172, 1910.

Rhynchotragus guentheri, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1905, p. 88; *Lönnberg, Arkiv Zool.* vol. iv, no. 3, p. 2, 1907; *Drake-Brockman, Mamm. of Somali.* p. 72, 1910, *Proc. Zool. Soc.* 1911, p. 982.

Madoqua (Rhynchotragus) guentheri, *Lydekker, Game Animals of Africa*, p. 193, 1908.

Typical locality Ogaden, Somaliland.

The type of *Rhynchotragus*.

Typically, the size of *M. kirki*, with the proboscis much elongated and the nasals extremely short; tip of nasals about on level with hind margin of penultimate premolar, and separated by an interval of about $1\frac{5}{8}$ inches (41 mm.) from

the tip of the premaxillæ; the latter bones short and widely separated from nasals (with which they articulate in *M. kirki hindei*); general colour, in typical race, coarsely grizzled greyish fawn, much as in Kilimanjaro examples of *M. kirki;* no rufous on flanks, and that on limbs very dull; crest much mingled with black; backs of ears greyish fawn. For skull-measurements, see below.

The range of the species extends from Somaliland and Gallaland to British East Africa.

The three races are distinguished as follows:—

A. Size relatively small.
 a. Under-parts pale pinkish buff..... *M. g. guentheri.*
 b. Under-parts white..... *M. g. wroughtoni.*
B. Size considerably larger..... *M. g. smithi.*

The third race presents much the same relation to the first as is borne by *M. cavendishi* to *M. kirki.*

A.—Madoqua guentheri guentheri.

Typical locality Ogaden, Somaliland.

Size relatively small. Colour as described above. Basal length of skull $3\frac{3}{16}$ inches (96 mm.),* maximum width $2\frac{1}{8}$ (53 mm.), length from muzzle to orbit $2\frac{1}{16}$ (51 mm.), do. from tip of nasals to tip of premaxillæ $1\frac{5}{8}$ inches (41·5 mm.).

94. 2. 21. 18. Skull, female. Central Ogaden, Somaliland; collected by Lieut.-Col. H. G. C. Swayne. Type.
Presented by Dr. P. L. Sclater, 1894.

94. 2. 21. 16–17. Two skins. Same locality and collector.
Same history.

86. 11. 19. 2. Skull, with horns, and skin. Central Somaliland. *Presented by E. Lort Phillips, Esq.*, 1886.

96. 10. 8. 4. Skull, with horns, and skin. Kurrimangi, Somaliland. *Presented by Capt. G. L. F. Leathes*, 1896.

96. 10. 8. 5. Skull and skin, female. Same locality.
Same history.

99. 12. 28. 1. Skull, with horns, and skin. Wardare, Somaliland. *Presented by C. V. A. Peel, Esq.*, 1899.

* Thomas, *Proc. Zool. Soc.* 1900, p. 804: smaller dimensions are given in the *Book of Antelopes.*

99. 12. 28. 2. Skull and skin, female. Same locality.
Same history.

96. 6. 23. 1. Skin, mounted, and skull. Somaliland.
Presented by Major P. H. G. Powell-Cotton, 1896.

96. 6. 23. 1. Skin, female, mounted. Same locality.
Same history.

4. 5. 9. 3. Skull and skin, female. Gerbergi, Somaliland. *Presented by Major H. N. Dunn*, 1904.

6. 9. 1. 40–42. Three skulls and skin, female, one immature. Dawa Valley, British East Africa.
Presented by Dr. R. E. Drake-Brockman, 1906.

11. 8. 2. 42–47. Six imperfect skins. Mogadishu, Italian Somaliland. *Same donor*, 1911.

0. 3. 17. 26. Skull, with horns. No locality.
Presented by the Lord Delamere, 1900.

95. 10. 13. 1. Skull, with horns. Jug Fafan, south-western central Somaliland.
Presented by Dr. R. B. Christie, 1895.

B.—Madoqua guentheri wroughtoni.

Rhynchotragus guentheri wroughtoni, *Drake-Brockman*, *Ann. Mag. Nat. Hist.* ser. 8, vol. iv, p. 51, 1909, *Proc. Zool. Soc.* 1911, p. 984; *Lönnberg*, *K. Svenska Vet.-Ak. Handl.* vol. xlviii, no. 5, p. 155, 1912.

Typical locality Webi Valley, Gallaland.

Size approximately that of typical race, but general colour dark grizzled yellowish, fading only slightly as it extends on to shoulders, flanks, and haunches, although ending abruptly on under-parts, where the chest and abdomen are white, instead of the grizzled area fading somewhat gradually into the pale pinkish buff of the chest and abdomen as in *M. g. guentheri;* crest, muzzle, and legs rather darker than in latter; ears broader and larger than in any other duiker except *M. cavendishi*, to which this race presents a superficial resemblance. Basal length of skull $3\frac{3}{4}$ inches (95 mm.); maximum width $2\frac{3}{8}$ inches (55 mm.).

9. 6. 1. 39. Skull, with horns, and skin. Mount Abu-el-Kassim, north bank of Webi River, Gallaland. Type.
Presented by Dr. R. E. Drake-Brockman, 1909.

0. 3. 27. 27. Skull, with horns, and skin. Layer Valley, near Gewima, British East Africa.

Presented by the Lord Delamere, 1900.

0. 3. 27. 24. Skull and (?) skin, immature Same locality. *Same history.*

C.—Madoqua guentheri smithi.

Madoqua guentheri smithi, *Thomas*, *Proc. Zool. Soc.* 1900, p. 804; *Lydekker*, *Game Animals of Africa*, p. 194, 1908.

Rhynchotragus guentheri smithi, *Lönnberg*, *Arkiv Zool.* vol. iv, no. 3, p. 2, 1907.

Typical locality Lake Stephanie district.

Known by the skull and head-skin, the former of which is much larger and stouter than that of the typical race; basal length $4\frac{1}{16}$ inches (102·5 mm.); maximum width $2\frac{5}{16}$ (59 mm.); length from tip of premaxillæ to orbit $2\frac{5}{16}$ inches (59 mm.).

0. 11. 7. 13. Skull, with horns, and head-skin. South-east of Lake Stephanie. Type.

Presented by Dr. Donaldson Smith, 1900.

XII. MADOQUA (RHYNCHOTRAGUS) NASOGUTTATA.

Madoqua (Rhynchotragus) nasoguttatus, *Lönnberg*, *Arkiv Zool.* vol. iv, no. 3, p. 1, 1907.

Madoqua (Rhynchotragus) nasoguttata, *Lydekker*, *Game Animals of Africa*, p. 194, 1908.

Rhynchotragus nasoguttatus, *Lönnberg*, *Arkiv Zool.* vol. iv, no. 3, p. 7, 1907; *Drake-Brockman*, *Proc. Zool. Soc.* 1911, p. 978.

Typical locality Lake Baringo district, British East Africa.

Nearly allied to *M. guentheri*, but with still shorter nasals (12 × 14 mm.); upper row of cheek-teeth relatively long, measuring 37 mm., or the same as in the much larger *M. g. smithi* (the corresponding measurement in typical *guentheri* being 33 mm.). General colour grizzled grey; face pale rufous, brighter on forehead, profusely spotted on lower half with white. Drake-Brockman (*loc. cit.*) suggested, from the analogy of *M. kirki*, that the white nose-spots, on which this

species was founded, might prove to be inconstant; but the under-mentioned specimens tend to indicate their constancy.

10. 12. 19. 83–84. Two skulls, with horns, and skins. Lake Baringo district; collected by Mr. R. Kemp.

Presented by C. D. Rudd, Esq., 1910.

10. 12. 19. 85–86. Two skulls and skins, female, one immature. Same locality and collector. *Same history.*

II. Genus DORCOTRAGUS.

Dorcotragus, *Noack*, *Zool. Anz.* 1894, p. 202; *Elliot*, *Field Mus. Zool. Pub.* vol. i, p. 135, 1897; *Sclater and Thomas*, *Book of Antelopes*, vol. iii, p. 241, 1898; *Pocock*, *Proc. Zool. Soc.* 1910, p. 878.

Dorcatragus, *Trouessart*, *Cat. Mamm.* vol. ii, p. 949, 1898, *et auctorum alterum.*

Size somewhat larger than in *Madoqua;* females apparently not bigger than males; muzzle normal, with a small naked area; crown of head not tufted; ears very large; no face-glands; tail short; hoofs short with pads on supporting surface; minute lateral hoofs present; heel-tie in the form of a double fold, of which the front one projects as a kind of ridge; horns of males longer than skull. Skull short and broad, with relatively short nasals and long premaxillæ, small and shallow lachrymal pits, and inflated auditory bullæ.

The distribution is restricted to the mountains of Somaliland and part of Abyssinia.

Placed by Sclater and Thomas in the *Antilopinæ*, this genus was associated with *Madoqua* as a separate subfamily in 1910 by Pocock, who considers that the foot-glands are essentially of the dik-dik type. A superficial resemblance of the feet of the beira to those of goats and sheep is an adaptation to a mountain life.

DORCOTRAGUS MEGALOTIS.

Oreotragus megalotis, *Menges*, *Zool. Anz.* 1894, p. 131.

Dorcotragus megalotis, *Noack*, *Zool. Anz.* 1894, p. 202; *Elliot*, *Field Mus. Zool. Pub.* vol. i, p. 135, 1897; *Sclater and Thomas*, *Book of Antelopes*, vol. iii, p. 241, pl. lxxv, 1898; *Lydekker*, *Great and Small Game of Africa*, p. 377, 1899, *Game Animals*

of Africa, p. 278, 1908; *de Poncins, Great and Small Game of Africa*, p. 377, 1899; *Rothschild, Powell-Cotton's Sporting Trip through Abyssinia*, p. 474, 1902; *Pocock, Proc. Zool. Soc.* 1910, p. 878.

Dorcatragus megalotis, *Trouessart, Cat. Mamm.* vol. ii, p. 949, 1894; *Ward, Records of Big Game*, ed. 6, p. 169, 1910; *Drake-Brockman, Mamm. of Somali.* p. 65, 1910.

BEIRA, or BAIRA.

Typical locality Somaliland, to which country, together with part of Abyssinia, the species is confined.

Size approximately that of a grysbok; shoulder-height about 20 inches. General colour purplish grey grizzled with

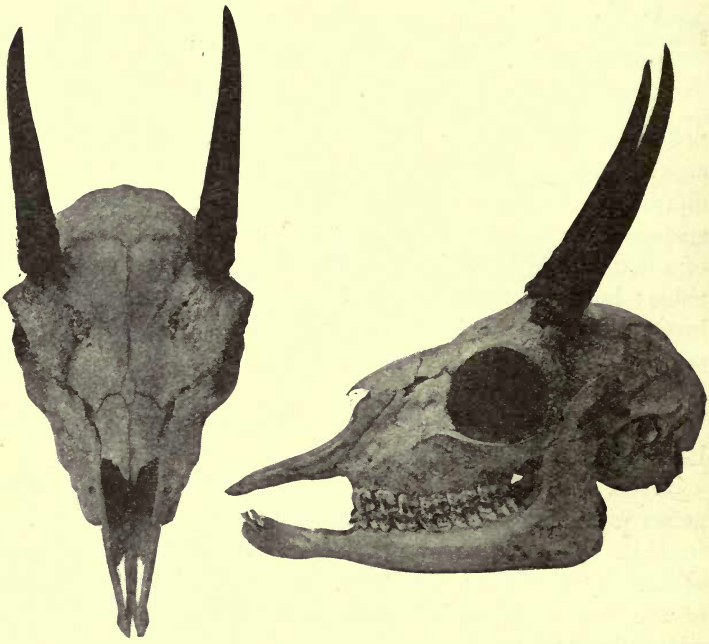


FIG. 22.—FRONT AND SIDE VIEWS OF SKULL AND HORNS OF THE BEIRA (*Dorcotragus megalotis*).

white, which forms the extreme tips of the hairs; a narrow dark flank-band separating the grey area from the yellowish or orange fawn of under-parts, which extends on to outer surfaces of thighs and upper part of legs, the remainder of the latter being darker fulvous; head bright fulvous, in

marked contrast to the grey of the neck, with a white ring round each eye; tail coloured throughout like back. Basal length of skull 4⅜ inches (111 mm.), maximum width 3⅜ (85 mm.), length from muzzle to orbit 3¼ inches (82 mm.).

94. 9. 27. 1. Skin, mounted, and skull. Somaliland; collected by Herr J. Menges. *Purchased*, 1894.

94. 9. 27. 2. Skull and skin, female. Same locality and collector. *Same history.*

94. 4. 14. 1–2. Two skins and frontlet, with horns. Same locality and collector. *Same history.*

7. 4. 19. 1. Head, mounted, female. Somaliland. *Presented by F. M. Ransford, Esq.*

99. 2. 11. 6. Skull, with horns. North Somaliland. *Presented by the Lord Delamere*, 1899.

0. 3. 27. 30. Skull, with horns (fig. 22). Adadleh, Somaliland. *Same donor*, 1900

99. 7. 8. 7. Skull and skin, female. Same locality. *Same donor*, 1899.

6. 5. 4. 16. Skull and skin, female. Waggar Mountains, Somaliland. *Presented by Dr. R. E. Drake-Brockman*, 1906.

6. 5. 4. 17. Skin, female. Same locality. *Same history.*

6. 5. 4. 18. Skin, female. Sheitch, Somaliland. *Same history.*

6. 5. 4. 19. Skull and skin, immature. Near Sogsodi, Somaliland. *Same history.*

11. 8. 2. 56. Skull, with horns. Golis Range, Somaliland. *Same donor*, 1911.

12. 12. 91. 1. Skull and skin, female. Berbera, Somaliland. *Presented by Arnold Hodson, Esq.*, 1912.

Subfamily x.—REDUNCINÆ.

Large or medium-sized antelopes, with horns only in the males, which are ridged, and usually curved and distinctly heteronymous, but may form simple spikes. Muzzle naked; face-glands rudimentary or wanting, but the lachrymal depression in the skull always absent; inguinal glands present or absent; foot-glands wanting except in *Pelea;* two pairs of teats; false hoofs well developed; main hoofs united almost throughout their basal length by an interungual band

of bare integument, extending forwards from the "heels"; * no metatarsal glands; tail moderate.

Although smooth in front of the orbits, owing to the absence of a depression in the lachrymal, the skull has a pair of deep pits in the frontals, generally lachrymal vacuities, the auditory bullæ large and inflated, and normal premaxillæ and nasals. The crowns of the second pair of incisors have expanded summits; the upper molars are relatively narrow, without an inner accessory column, except in the first of the series. When large, the horns, which are strongly ridged, except at the tips, are frequently directed backwards at the base, and then curve upwards and forwards at the tips, but they may have a sublyrate, sigmoid curvature.

At the present day the group is restricted to Ethiopian Africa, but during the Pliocene it existed in India and other parts of Asia.

Pocock † remarks that the members of this subfamily differ markedly from the *Neotraginæ* [and *Madoquinæ*] "in the structure of the feet, since they entirely lack the deep and long interdigital cleft on the front of the pastern. . . . With the exception of the Indian genera of *Tragelaphinæ*, the preorbital gland is absent in that group; and in the *Cervicaprinæ* [= *Reduncinæ*] it is at most represented by integumental thickening. In both groups, and in no other subfamilies of *Bovidæ*, two pairs of inguinal pouches have been recorded. More significant still is the fact that the structure of the feet, whether pedal glands be present or absent, is the same in the *Cervicaprinæ* as in the *Tragelaphinæ*. Corroborating these characters are the presence of two pairs of mammæ and a moderate or large rhinarium [muffle], to which may be added the invariable absence of horns in the females of *Cervicaprinæ* and in [those of] most genera of *Tragelaphinæ*."

The subfamily may be divided into the following genera:—

A. Horns small and spike-like; summit of muffle swollen, glandular, and extending beyond posterior notch of nostrils; no face-glands; foot-glands in both pairs of limbs *Pelea*.

* See page 172.

† *Proc. Zool. Soc.* 1910, p. 917.

B. Horns large and curved; muffle usually normal, not extending beyond notch of nostrils; foot-glands represented, at most, by the duct.

a. A bare patch below ear; no face-glands; one or two pairs of inguinal glands; tail bushy (as in *Pelea*) *Redunca*.

b. No bare subauricular patch; rudimentary face-glands; inguinal glands absent or represented by a single pair of pouches; tail tufted *Kobus*.

I. Genus PELEA.

Pelea, *Gray*, *Proc. Zool. Soc.* 1850, p. 126; *Sclater and Thomas*, *Book of Antelopes*, vol. ii, p. 187, 1897; *Rütimeyer*, *Abk. schweiz. pal. Ges.* vol. iv, p. 67, 1877; *Pocock*, *Proc. Zool. Soc.* 1910, p. 911.

Size relatively small; build light, and horns of male in the form of nearly vertical spikes; muffle large, swollen and glandular at summit, and extending beyond posterior notch of nostrils; no face-glands or bare patch below ear; tail bushy; foot-glands present in all four limbs, opening by a short duct with a small orifice on front of pasterns above hoofs; no inguinal glands; coat somewhat woolly. Skull with relatively large lachrymal vacuities, relatively small auditory bullæ, and premaxillæ not reaching nasals.

The distribution of the single species is restricted to South Africa.

PELEA CAPREOLUS.

Antilope capreolus, *Bechstein*, *Uebersicht vierfüss. Thiere*, vol. i, p. 98, 1799, vol. ii, p. 646, 1800; *Thunberg*, *Mém. Ac. Sci. St. Pétersb.* vol. iii, p. 312, 1811; *Afzelius*, *Nova Acta Soc. Upsal.* vol. vii, pp. 251 and 262, 1815; *Goldfuss*, *Schreber's Säugthiere*, vol. v, p. 1232, 1818; *Schinz*, *Cuvier's Thierreich*, vol. i, p. 393, 1821, *Synop. Mamm.* vol. ii, p. 410, 1845, *Mon. Antilop.* p. 14, pl. xiii, 1848; *Desmarest*, *Mammalogie*, vol. ii, p. 461, 1822; *Lichtenstein*, *Darstellung. Säugeth.* pl. viii, 1827; *Lesson*, *Man. Mamm.* p. 377, 1827, *Hist. Nat. Anim.* vol. x, p. 291, 1836; *J. B. Fischer*, *Synop. Mamm.* p. 467, 1829; *Smuts*, *Enum. Mamm. Cap.* p. 77, 1832; *Owen*, *Proc. Zool. Soc.* 1836, p. 38, *Anat. Vertebrates*, vol. iii, p. 634, 1868; *Oken*, *Allgemeine Naturgeschichte*, vol. vii, p. 1364, 1838; *Forster*, *Descrip. Anim.* p. 392, 1844; *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. iv, p. 428, 1844, vol. v, p. 430, 1855; *Giebel*, *Säugethiere*, p. 315, 1855.

Antilope (Gazella) capreolus, *Lichtenstein*, *Mag. nat. Freunde*, vol. vi, p. 174, 1814.

Cemas capreolus, *Oken*, *Lehrbuch Naturgeschichte*, vol. iii, pt. 2, p. 740, 1816.

Antilope lanata, *Desmoulins, Dict. Class. Hist. Nat.* vol. i, p. 445, 1822; *Laurillard, Dict. Univ. Hist. Nat.* vol. i, p. 623, 1841.

Antilope villosa, *Burchell, Travels in S. Africa*, vol. ii, p. 302, 1824, *List Mamm. presented to Brit. Mus.* p. 5, 1825; *H. Smith, Griffith's Animal Kingdom*, vol. iv, p. 251, 1827; *Lesson, Hist. Nat. Anim.* vol. x, p. 290, 1836, *Nouv. Tabl. Règne Anim., Mamm.* p. 177, 1842; *Gervais, Dict. Sci. Nat.* vol. i, p. 262, 1840.

Antilope (Redunca) villosa, *H. Smith, Griffith's Animal Kingdom*, vol. v, p. 339, 1827.

Redunca capreolus, *A. Smith, S. African Quart. Journ.* vol. ii, p. 107, 1834; *Harris, Wild Animals of S. Africa*, p. 138, pl. xxv, fig. 1, 1840; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 169, 1869.

Eleotragus villosus, *Gray, List Mamm. Brit. Mus.* p. 165, 1843.

Cervicapra capreolus, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 193, 1846.

Eleotragus capreolus, *Gray, Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 232, 1846, *List Osteol. Brit. Mus.* p. 57, 1847, *Knowsley Menagerie*, p. 12, 1850; *Blyth, Cat. Mamm. Mus. Asiat. Soc. Bengal*, p. 168, 1863.

Eleotragus (Pelea) capreolus, *Gray, Proc. Zool. Soc.* 1850, p. 126, *Ann. Mag. Nat. Hist.* ser. 2, vol. viii, p. 144, 1851.

Pelea capreolus,* *Gray, Cat. Ungulata Brit. Mus.* p. 90, 1852, *Cat. Ruminants Brit. Mus.* p. 29, 1872, *Hand-List Ruminants Brit. Mus.* p. 99, 1873; *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 238, 1862; *Bryden, Kloof and Karroo*, pp. 125 and 297, 1889; *Flower and Lydekker, Study of Mammals*, p. 339, 1891; *Ward, Records of Big Game*, p. 85, 1892, ed. 6, p. 213, 1910; *Nicolls and Eglington, Sportsman in S. Africa*, p. 33, 1892; *Lydekker, Horns and Hoofs*, p. 220, 1893, *Great and Small Game of Africa*, p. 319, 1899, *Game Animals of Africa*, p. 237, 1908; *Lorenz, Ann. Hofmus. Wien*, vol. ix, *Notizen*, p. 60, 1894; *Rendall, Proc. Zool. Soc.* 1895, p. 360; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 189, pl. xlvi, 1897; *W. L. Sclater, Fauna S. Africa, Mamm.* vol. i, p. 200, 1900; *Pocock, Proc. Zool. Soc.* 1910, p. 911.

Calotragus capreolus, *Temminck, Esquiss. Zool. Guiné*, p. 191, 1853.

Vaal Rhebok.

Typical locality Cape Colony.

Size relatively small—shoulder-height about 29 or 30 inches; build comparatively slender and delicate; coat soft and somewhat woolly, although not very thick; ears long and narrow. General colour dull pale French grey, tending to fawn on head and limbs, the front of the lower segments of the latter being slightly darker; a distinct blackish patch on chin; under-parts scarcely paler than back; tail, which is somewhat bushy, reaching to about the level of the groin, fawn-grey above at and near the base, white at the tip and

* The name is not infrequently given as *P. capreola*.

below. Horns slender, rising nearly vertically, with a slight forward inclination; in good specimens the length ranges from 8 to 11½ inches, the girth from 2 to 2⅝ inches, and the tip-to-tip interval from 2 to 6¾ inches. Basal length of skull about 7½ inches (190 mm.), maximum width 4 inches

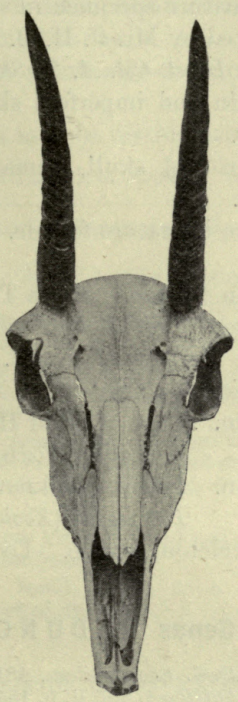


Fig. 23.—Skull and Horns of the Vaal Rhebok (*Pelea capreolus*).

(101 mm.), interval between orbit and muzzle 5 inches (126 mm.).

The distribution is confined to the area south of the Zambesi.

81. 5. 11. 1. Skin, mounted. South Africa.
Presented by R. G. Breakes, Esq., 1881.

629, *a*. Skull, imperfect. Zoetmilks Valley, Swellendam, Cape Colony. Co-type of *Antilope villosa*.
Presented by Dr. W. J. Burchell, about 1817.

44, *a*. Skin, female (formerly mounted). Mossel Bay, South Africa. Co-type of *A. villosa*. *Same history.*

44, *b*. Skin, female, mounted. South Africa.
No history.

629, *b*. Skull, female. South Africa. *No history.*

67. 4. 12. 222. Skull, with horns (fig. 23). South Africa.
Lidth de Jeude Collection, purchased, 1867.

3. 3. 6. 31. Immature specimen in spirit. Deelfontein, Cape Colony; collected by Mr. C. H. B. Grant.
Presented by Lieut.-Col. A. T. Sloggett, C.M.G., 1903.

2. 12. 1. 37. Skin and imperfect skull, female. Same locality and collector. *Same donor*, 1902.

2. 12. 1. 36. Skin and skull, immature female. Same locality and collector. *Same history.*

3. 1. 4. 61. Skin, immature female. Same locality and collector. *Same donor*, 1903.

12. 7. 17. 1. Skin, female. Shaba Tsuen, Basutoland.
Presented by W. Bosworth Smith, Esq., 1912.

2. 2. 8. 5. Skin. Ladysmith, Natal.
Presented by Lieut.-Col. Sir David Bruce, K.C.B., 1902.

37. 4. 28. 2. Skin. Cape of Good Hope.
J. Gould Collection, purchased, 1837.

60. 7. 22. 1. Skin. Locality unknown.
Purchased (*Zoological Society*), 1860.

60. 7. 22. 18. Skeleton, female. Locality unknown.
Same history.

II. Genus REDUNCA.

Cervicapra, *Blainville, Bull. Soc. Philom.* 1816, p. 75; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 155, 1897; *Pocock, Proc. Zool. Soc.* 1910, p. 913; nec *Sparrman*, 1780.*

Redunca, *H. Smith, Griffith's Animal Kingdom*, vol. v, p. 337, 1827, as a subgenus.

Nagor, *Laurillard, Dict. Univ. Hist. Nat.* vol. i, p. 621, 1841,† as a subgenus.

Oreodorcas, *Heller, Smithson. Misc. Collect.* vol. lx, no. 8, p. 13, 1912.

Size medium; build relatively light. Horns of male medium in length, curving regularly upwards and outwards, and in some cases forwards or inwards at tips; muffle

* See Palmer, *Index Gen. Mamm.* p. 173, 1904, where it is stated that *Antilope cervicapra* should be regarded as the type of *Cervicapra*, Sparrman.

† For the date of this work see *Ann. Mag. Nat. Hist.* ser. 7, vol. vii, p. 350, 1899.

typically normal, not extending beyond posterior notch of nostrils; no face-glands, but a bare, and probably glandular, patch of skin below each ear; tail bushy; foot-glands represented, at most, by the duct of the glands existing in *Pelea;* one or two pairs of inguinal glands; coat hairy; skull light, with large lachrymal vacuities, small auditory bullæ, and the premaxillæ not reaching the nasals.

The distribution is practically co-extensive with that of the subfamily.

The two subgenera may be distinguished as follows:—

A. Muffle extending beyond notch of nostrils; one pair of inguinal glands *Eleotragus.*
B. Muffle normal; two pairs of inguinal glands *Redunca.*

The following is a "key" to the species:—

A. Colour tending to grey, distinctly grizzled; head and neck more fulvous, tail very bushy.
 a. Size small, colour rich, with a rufous tinge, skull broad, horns slightly hooked at tips, muffle normal..... *R. fulvorufula.*
 b. Size large, colour paler, with a fulvous tinge, skull narrow, horns more hooked at tips, muffle extending beyond notch of nostrils..... *R. arundinum.*
B. Colour yellower and less grizzled, head and neck like body, tail less bushy.
 Size medium or small, horns, as a rule, abruptly hooked at tips..... *R. redunca*

1. Subgenus ELEOTRAGUS.

Eleotragus, *Gray*, *List Mamm. Brit. Mus.* p. 165, 1843.

Muffle inflated and extending beyond line of posterior notches of nostrils; a single pair of large inguinal glands opening forwards along sides of abdomen, away from teats.*

I. REDUNCA (ELEOTRAGUS) ARUNDINUM.

Antilope arundinum, *Boddaert*, *Elenchus Anim.* p. 145, 1785.
Antilope eleotragus, *Schreber*, *Säugthiere*, pl. cclxvi, 1785; *Shaw*, *Gen. Zool.* vol. ii, pt. 2, p. 349, 1801; *Cuvier*, *Dict. Sci. Nat.* vol. ii, p. 244, 1804; *Thunberg*, *Mém. Ac. Sci. St. Pétersb.* vol. iii,

* For the characters of the inguinal glands in the two groups the writer is indebted to Mr. Pocock.

p. 314, 1811; *Lichtenstein, Mag. nat. Freunde*, vol. vi, p. 173, 1814; *Afzelius, Nova Acta. Soc. Upsal.* vol. vii, p. 220, 1815; *Desmarest, Nouv. Dict. Hist. Nat.* vol. ii, p. 190, 1816, *Mamm.* vol. ii, p. 459, 1822; *Goldfuss, Schreber's Säugthiere*, vol. v, p. 1225, 1818; *Schinz, Cuvier's Thierreich*, p. 395, 1821, *Synop. Mamm.* vol. ii, p. 410, 1845; *Burchell, List Quadr. presented to Brit. Mus.* p. 6, 1825; *H. Smith. Griffith's Animal Kingdom*, vol. iv, p. 237, 1827; *Lesson, Man. Mamm.* p. 376, 1827, *Hist. Nat. Anim.* vol. x, p. 290, 1836; *J. B. Fischer, Synop. Mamm.* p. 465, 1829; *Owen, Proc. Zool. Soc.* 1836, p. 38, *Anat. Vertebrates*, vol. iii, p. 634, 1868; *Oken, Allgemeine Naturgesch.* vol. vii, p. 1364, 1838; *Laurillard, Dict. Univ. Hist. Nat.* vol. ii, p. 621, 1841; *Wagner, Schreber's Säugthiere, Suppl.* vol. iv, p. 266, 1844, vol. v, p. 431, 1855; *Giebel, Säugethiere*, p. 315, 1855.

Antilope cœrulescens, *Link, Beyträge Naturgesch.* vol. ii, p. 99, 1799.

Antilope oreotragus, *Bechstein, Uebersicht vierfüss. Thiere*, vol. i, p. 80, 1799, nec *Schreber*.

Antilope arundinaceus, *Bechstein, op. cit.* p. 81, 1799, vol. ii, p. 644, 1800; *Shaw, Gen. Zool.* vol. ii, p. 347, 1801; *Huet, Bull. Soc. Acclim.* ser. 4, vol. iv, p. 485, 1887.

Antilope cinerea, *Bechstein, op. cit.* vol. ii, p. 643, 1800; *Afzelius, Nova Acta Soc. Upsal.* vol. vii, p. 250, 1815.

Antilope isabellina, *Afzelius, op. cit.* p. 250, 1815; *Goldfuss, Schreber's Säugthiere*, vol. v, p. 1226, 1818; *Desmarest, Mammalogie*, vol. ii, p. 260, 1822; *H. Smith, Griffith's Animal Kingdom*, vol. iv, p. 240, vol. v, p. 338, 1827; *Lichtenstein, Darstellung. Säugeth.* pl. x, 1827; *Smuts, Enum. Mamm. Cap.* p. 76, 1832; *Schinz, Synop. Mamm.* vol. i, p. 411, 1845, *Mon. Antilop.* p. 15, pl. xv, 1848; *Peters, Reise nach Mossambique, Säugeth.* p. 189, 1852.

Cerophorus (Cervicapra) eleotragus, *Blainville, Bull. Soc. Philom.* 1816, p. 75.

Cemas arundinacea, *Oken, Lehrbuch Naturgeschichte*, vol. iii, pt. 2, p. 740, 1816.

Antilope oleotragus, *Desmoulins, Dict. Class. Hist. Nat.* vol. i, p. 446, 1822; *Gervais, Dict. Sci. Nat.* vol. i, p. 261, 1840; *Lesson, Nouv. Tabl. Règne Anim., Mamm.* p. 177, 1842.

Antilope (Redunca) eleotragus, *H. Smith, Griffith's Animal Kingdom*, vol. v, p. 337, 1827.

Redunca eleotragus, *A. Smith, S. African Quart. Journ.* vol. ii, p. 210, 1834; *Rüppell, Verzeichniss Mus. Senckenberg*, pt. 1, p. 38, 1842.

Redunca isabellina, *A. Smith, S. African Quart. Journ.* vol. ii, p. 210, 1834.

Eleotragus isabellinus, *Gray, List Mamm. Brit. Mus.* p. 165, 1843; *Temminck, Esquiss. Zool. Guiné*, p. 191, 1853; *Jentink, Cat. Mamm. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 159, 1892.

Eleotragus reduncus, *Gray, List Mamm. Brit. Mus.* p. 165, 1843, *nec* Antilope redunca, *Pallas*.

Cervicapra isabellina, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 194, 1846; *Sclater, List Anim. Zool. Gardens*, p. 144, 1883.

Eleotragus arundinaceus, *Gray, Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 232, 1846, ser. 2, vol. viii, p. 144, 1851, *List Osteol. Brit. Mus.* p. 57, 1847, *Knowsley Menagerie*, p. 12, 1850, *Proc. Zool. Soc.*

1850, p. 126, *Cat. Ungulata Brit. Mus.* p. 91, 1852, *Cat. Ruminants Brit. Mus.* p. 18, 1872, *Hand-List Ruminants Brit. Mus.* p. 88, 1873; *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 138, 1862; *Kirk, Proc. Zool. Soc.* 1864, p. 657; *Drummond, Large Game of S. Africa*, p. 397, 1875; *Bryden, Kloof and Karroo*, p. 297, 1887; *Bocage, J. Sci. Lisboa*, ser. 2, vol. v, p. 28, 1890.

Redunca isabellina, *var.* multiannulata, caffra, *and* algoënsis, *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 169, 1869.

Cervicapra arundinacea, *Selous, Proc. Zool. Soc.* 1881, p. 758, *A Hunter's Wanderings in S. Africa*, p. 216, 1881; *Crawshay, Proc. Zool. Soc.* 1890, p. 653; *W. L. Sclater, Cat. Mamm. Ind. Mus.* pt. ii, p. 164, 1891; *Lorenz, Ann. Hofmus. Wien*, vol. ix, *Notizen*, p. 61, 1894.

Eleotragus eleotragus, *Jentink, Notes Leyden Mus.* vol. ix, p. 172, 1887.

Cervicapra arundinum, *Flower and Lydekker, Study of Mammals*, p. 340, 1891; *Ward, Records of Big Game*, p. 93, 1892, ed. 6, p. 215, 1910; *Nicolls and Eglington, Sportsman in S. Africa*, p. 36, 1892; *Lydekker, Horns and Hoofs*, p. 227, 1893, *Great and Small Game of Africa*, p. 305, 1899, *Proc. Zool. Soc.* 1899, p. 555, *Field*, vol. cviii, p. 778, 1906, *Game Animals of Africa*, p. 223, 1908; *Sclater, Proc. Zool. Soc.* 1893, p. 728; *Thomas, ibid.* 1894, p. 146; *Rendall, ibid.* 1895, p. 358; *Matschie, Säugethiere Deutsch-Ostafrika*, p. 127, 1895; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 157, pl. xliii, 1897; *W. L. Sclater, Fauna S. Africa, Mamm.* vol. i, p. 194, 1900; *Pocock, Proc. Zool. Soc.* 1910, p. 913; *Letcher, Big Game N.E. Rhodesia*, p. 198, 1911; *Blaine, Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 289, 1913; *Hamilton, Proc. Zool. Soc.* 1913, p. 537.

Cervicapra thomasinæ, *Sclater, Proc. Zool. Soc.* 1900, p. 429, pl. xxvi; *Sclater and Thomas, Book of Antelopes*, vol. iv, p. 227, 1900.

Redunca arundinum, *Trouessart, Cat. Mamm., Suppl.* p. 721, 1905; *Lönnberg, Arkiv Zool.* vol. v. no. 10, p. 5, 1909.

Redunca thomasinæ, *Trouessart, loc. cit.* 1905.

Rietbok, or Reedbuck.

Type of *Eleotragus*.

Typical locality Cape Colony.

Size large, the shoulder-height being about 36 inches, and the length of the skull $11\frac{7}{16}$ inches (290 mm.). Skull narrow across orbits, with long rostrum—length $5\frac{1}{2}$ inches (164 mm.)—and small orbits. General colour light greyish fawn, strongly but finely grizzled with brown, and having a more or less fulvous tinge, which becomes pronounced on the head and neck, so as to cause a marked contrast between their tint and that of the body; occasionally a brown patch on muzzle or crown; chin and under-parts white; back of ears pale fawn, without black tips; a whitish patch at base of ears round the subauricular bare area, the latter clothed in

young animals with short, velvety, white hairs; fore-legs generally black in front from knees to hoofs, fawn on outer and white on inner surface; hind-limbs frequently with similar black markings on lower part of shanks; tail thick, bushy, and reaching half-way to hocks, with the root and upper surface fawn, and the tip and under side white. Horns relatively long, with a moderate but not abrupt hook-like curvature at tips; the growing pad at their bases persistent throughout life as a soft, rounded swelling. Good horns range from 15 to 17½ (18, it is stated in one instance) inches in length, and from 5 to 6½ (in one case 7½) inches in girth, with a tip-to-tip interval of from 9½ to 20½ inches. Basal length of skull about 10¼ inches (259 mm.), maximum width 4¾ inches (120 mm.), interval between muzzle and orbit 6¼ inches (158 mm.).

The French-grey form from Nyasaland described as *Cervicapra thomasinæ* seems to be merely an excessive development of the greyness characteristic of this species, and is probably restricted to individuals sprung from a single parent stock. The resemblance in colour of this phase to *Pelea* is very notable.

The range extends from South Africa to the Bahr-el-Ghazal on the eastern side of the continent, and as far north as Angola on the west.

The following two closely allied races are recognised:—

A. Head and neck fulvous; body, limbs and tail greyish fawn *R. a. arundinum.*
B. Head and neck greyer fulvous; body, limbs, and tail rusty grey..... *R. a. occidentalis.*

A.—Redunca arundinum arundinum.

Typical locality Cape Colony, whence the range extends (exclusive of Northern Rhodesia and the Bangweolo Flats) to the Bahr-el-Ghazal, where it overlaps that of *R. redunca bohor.*

General characters those of the species.

46. 3. 23. 34. Skull, with horns, and skin. South Africa. *Purchased* (*Williams*), 1846.

46. 3. 23. 35. Skull and skin, female. South Africa. *Same history.*

60, *b*. Skin, immature female. Lowu Kowi Valley, South Africa. *Presented by Dr. W. J. Burchell, about* 1817.

630, *c* (60, *a*). Skull, with horns. Reitfontein, South Africa. Described by Hamilton-Smith as *Antilope redunca*. *Same history.*

58. 11. 26. 1. Skull, with horns, and skin, immature. Locality unknown. *Purchased* (*Zoological Society*), 1858.



Fig. 24.—Head of Reedbuck (*Redunca* [*Eleotragus*] *arundinum*).

48. 7. 11. 2. Horns. South Africa. *Purchased* (*Argent*), 1848.

53. 10. 6. 3. Skull, with horns. South Africa. *Same history.*

82. 1. 27. 2. Skull, with horns. Collected by Sir John Kirk, G.C.M.G.; locality unknown. *Purchased*, 1881.

630, *j*. Skull and skin, female. Locality unknown. *Purchased* (*Zoological Society*).

93. 4. 10. 6. Skull, with horns. Mashonaland; collected by H. Barber, Esq. *Purchased*, 1893.

46. 4. 2. 10. Frontlet, with horns. South Africa.
Purchased (*Williams*), 1846.

10. 4. 10. 1. Skull, with horns. Portuguese East Africa. In this specimen, which stands fourth in Ward's list, the horns measure 16½ inches in length, with a girth of 5¾, and a tip-to-tip interval of 14½ inches.
Presented by J. Rowland Ward, Esq., 1910.

97. 11. 21. 1. Head, mounted (fig. 24). South Africa.
Same donor, 1897.

94. 3. 7. 3. Skull, with horns, and skin. Palombi Valley, Lake Shirwa, Nyasaland.
Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1894.

94. 3. 8. 13–14. Two skins, female, one immature. Lake Mweru district; collected by Sir Alfred Sharpe, K.C.M.G.
Purchased, 1894.

94. 3. 8. 16. Skull, imperfect, with horns. Same locality and collector. *Same history.*

95. 7. 22. 5. Skull, with horns. Zomba, Nyasaland.
Presented by Sir Alfred Sharpe, K.C.M.G., C.B., 1895.

93. 7. 25. 8. Skull, with horns. Between Lakes Nyasa and Tankanyika; collected by R. Crawshay, Esq.
Purchased, 1893.

94. 4. 3. 1. Skull, with horns, and skin. Lower Umvolosi Valley, Zululand.
Presented by the Christiania Museum, 1894.

97. 3. 15. 1. Head, mounted, and skull. Lunyena Valley, Henga, western Nyasaland.
Presented by R. Crawshay, Esq., 1897.

0. 11. 18. 6. Skull, with horns, and head-skin. Angoniland. *Presented by Sir A. Sharpe, K.C.M.G., C.B.*, 1900.

2. 12. 1. 38. Skull and skin, immature female. Deelfontein, Cape Colony; collected by Mr. C. H. B. Grant.
Presented by Lieut.-Col. A. T. Sloggett, C.M.G., 1902.

2. 12. 1. 39. Skull and skin, female. Same locality and collector. *Same history.*

6. 11. 8. 150–151. Two skulls, with horns, and skins. Coguno, Inhambane; collected by Mr. C. H. B. Grant.
Presented by C. D. Rudd, Esq., 1906.

6. 11. 8. 152. Skull and skin, female. Same locality and collector. *Same history.*

5. 12. 9. 84–85. Two skulls, with horns, and head-skins, immature. Klein Letaba, N. E. Transvaal; same collector. *Same donor*, 1905.

4. 12. 3. 105. Skull, with horns, and skin. Umvolosi Valley, Zululand; same collector. *Same donor*, 1904.

4. 12. 3. 104. Skull, with horns, and skin, immature. Matwa district, Zululand; same collector. *Same history.*

4. 12. 3. 103. Skull and skin. Same locality and collector. *Same history.*

7. 6. 2. 104–105. Two young skulls and head-skins. Masembete, 25 miles N.W. of Beira, Portuguese East Africa; same collector. *Same donor*, 1907.

8. 1. 1. 127. Skull, with horns, and skin. Gorongoza, Portuguese East Africa; same collector. *Same donor*, 1908.

8. 2. 14. 5. Skull, with horns, immature. Diampwe Valley, southern Angoniland. *Presented by C. B. C. Storey, Esq.*, 1908.

8. 2. 14. 16. Skull, with horns. Hewe Valley, a tributary of the Lwave. *Same history.*

8. 2. 14. 7. Skull, with horns. Rukuru, Lake Nderendere. *Same history.*

8. 2. 14. 8. Skull, with horns, immature. Same locality. *Same history.*

13. 2. 12. 1. Frontlet and horns. Mpimbe, Upper Shiri Valley, Nyasaland; collected by Col. F. C. Trollope. Figured in *The Book of Antelopes*, vol. ii, p. 163. Length of horns 17, tip-to-tip interval 19½ inches. *Presented by Messrs. W. and E. Trollope*, 1913.

6. 10. 20. 2. Head, mounted. Twenty-five miles N.E. of Wau, Bahr-el-Ghazal, lat. 85° 25′ N. Referred to by present writer in the *Field*, vol. cviii, p. 778, 1906, and by Blaine in *Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 288, 1913. *Presented by Capt. P. E. Vaughan*, 1906.

13. 9. 5. 1–3. Three skulls, with horns. Nyasaland; shot by the donor, April, 1901. *Presented by Lieut.-Col. Manning*, 1913.

2. 3. 29. 1. Skin, mounted. Songwi Valley, Lake Nyasa. Type of *Cervicapra thomasinæ*, which, as already mentioned, appears to be nothing more than a French-grey phase of the present species. Eight specimens of these pale grey reed-

bucks were known when Dr. Sclater wrote, but it does not appear to be ascertained whether they form a colony by themselves, or whether they mingle with normally coloured animals like the Lorian white waterbucks. If the inheritance be Mendelian, the pale variety might be maintained without individuals of the aberrant type pairing together.

Presented by Mrs. E. S. Grogan, 1902.

9. 1. 17. 1. Skull, with horns, and skin. The skin is very similar in colour to the preceding specimen. Mpila Valley, Lake Chinta, southern Nyasaland.

Presented by A. R. Andrew, Esq., 1909.

B.—Redunca arundinum occidentalis.

Cervicapra arundineum occidentalis, *Rothschild*, *Proc. Zool. Soc.* 1907, p. 237.

Typical locality neighbourhood of Fort Jackson, Northern Rhodesia: also found on Bangweolo Flats.

Type in Tring Museum.

Differs from typical race by the paler and greyer tint of the fulvous of the head and neck, and the pale rusty grey of the limbs, tail, and body; while the horns appear to be in most cases stouter and less curved.

The following specimens are provisionally referred to this race, without prejudice in regard to its validity.

7. 1. 12. 3. Skull, with horns. Barotsiland, N.W. Rhodesia. *Presented by J. Rowland Ward, Esq.*, 1907.

12. 3. 16. 3. Skull, with horns, and head-skin. Lumbatwa Valley, east of Lake Bangweolo.

Presented by the Hon. W. Guinness, 1912.

2. Subgenus **REDUNCA.**

Muffle normal; two pairs of relatively small inguinal glands, opening forwards and outwards, and dipping inwards towards the teats.

II. REDUNCA REDUNCA.

Antilope reversa, *Pallas*, *Misc. Zool.* p. 5, 1766, *nec* Capra reversa, *Linn.*

Antilope redunca, *Pallas*, *Spicil. Zool.* fasc. i, p. 8, 1767, xii, p. 13, 1777; *Müller*, *Natursyst.*, *Suppl.* p. 53, 1776; *Erxleben*, *Syst. Regn. Anim.* p. 281, 1777; *Zimmermann*, *Spec. Zool. Geogr.* p. 541, 1777, *Geogr. Geschichte*, vol. ii, p. 114, 1780, vol. iii, *explanation to chart*, p. 9, 1783; *Gatterer*, *Brev. Zool.* vol. i, p. 81, 1780; *Hermann*, *Tabl. Affin. Anim.* p. 108, 1783; *Schreber*, *Säugthiere*, pl. cclxv, 1785; *Boddaert*, *Elenchus Anim.* p. 141, 1785; *Gmelin*, *Linn.'s Syst. Nat.* vol. i, p. 184, 1788; *Kerr*, *Linn.'s Anim. Kingdom*, p. 308, 1792; *Donndorff*, *Zool. Beyträge*, vol. i, p. 624, 1792; *Link*, *Beyträge Naturgesch.* vol. ii, p. 98, 1795; *Bechstein*, *Uebersicht vierfüss. Thiere*, vol. ii, p. 643, 1800; *Shaw*, *Gen. Zool.* vol. ii, pt. 2, p. 360, 1801; *Turton*, *Linn.'s Syst. Nat.* vol. i, p. 112, 1802; *Desmarest*, *Nouv. Dict. Hist. Nat.* vol. xv, p. 330, 1803, vol. xxiv, tabl. p. 32, 1804, ed. 2, vol. ii, p. 188, 1816, *Mammalogie*, vol. ii, p. 458, 1822; *Cuvier*, *Dict. Sci. Nat.* vol. ii, p. 243, 1804; *Tiedemann*, *Zoologie*, vol. i, p. 409, 1808; *Lichtenstein*, *Mag. nat. Freunde*, vol. vi, p. 170, 1814; *G. Fischer*, *Zoognosia*, vol. iii, p. 410, 1814; *Afzelius*, *Nova Acta Soc. Upsal.* vol. vii, p. 220, 1815; *Goldfuss*, *Schreber's Säugthiere*, vol. v, p. 1200, 1818; *Schinz*, *Cuvier's Thierreich*, vol. i, p. 395, 1821, *Synop. Mamm.* vol. ii, p. 425, 1845; *H. Smith*, *Griffith's Animal Kingdom*, vol. iv, p. 238, 1827; *Lesson*, *Man. Mamm.* p. 375, 1827, *Hist. Nat. Anim.* vol. x, p. 290, 1836, *Nouv. Tabl. Règne Anim.*, *Mamm.* p. 177, 1842; *J. B. Fischer*, *Synop. Mamm.* p. 464, 1829; *Owen*, *Proc. Zool. Soc.* 1836, p. 38, *Anat. Vertebrates*, vol. iii, p. 364, 1868; *Oken*, *Allgemeine Naturgesch.* vol. vii, p. 1385, 1838; *Gervais*, *Dict. Sci. Nat.* vol. i, p. 261, 1840; *Rüppell*, *Mus. Senckenberg*, vol. iii, p. 182, 1842; *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. iv, p. 426, 1844, vol. v, p. 431, 1855; *Giebel*, *Säugethiere*, p. 314, 1855; *Huet*, *Bull. Soc. Acclim.* ser. 4, vol. iv, p. 267, 1887.

Antilope rufa, *Afzelius*, *Nova Acta Soc. Upsal.* vol. vii, p. 250, 1815.

Cerophorus (Cervicapra) redunca, *Blainville*, *Bull. Soc. Philom.* 1816, p. 75.

Antilope (Redunca) redunca, *H. Smith*, *Griffith's Animal Kingdom*, vol. v, p. 338, 1827.

Antilope (Nagor) redunca, *Laurillard*, *Dict. Univ. Hist. Nat.* vol. i, p. 621, 1841.

Redunca nagor, *Rüppell*, *Verzeichniss Mus. Senckenberg*, pt. i, p. 38, 1842.

Eleotragus reduncus, *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 232, 1846, ser. 2, vol. viii, p. 145, 1851, *Knowsley Menagerie*, p. 13, pl. xiii, 1850, *Proc. Zool. Soc.* 1850, p. 127, *Cat. Ungulata Brit. Mus.* p. 94, 1852, *Cat. Ruminants Brit. Mus.* p. 18, 1872, *Hand-List Ruminants Brit. Mus.* p. 88, 1873; *Temminck*, *Esquiss. Zool. Guinè*, p. 191, 1853; *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 130, 1887; *Huet*, *Bull. Soc. Acclim.* ser. 4, vol. iv, p. 267, 1887.

Cervicapra redunca, *Sundevall*, *k. Svenska Vet.-Ak. Handl.* 1844, p. 195, 1846; *Flower and Lydekker*, *Study of Mammals*, p. 340,

1891; *Lydekker, Horns and Hoofs*, p. 228, 1893, *Great and Small Game of Africa*, p. 305, 1899, *Game Animals of Africa*, p. 231, 1908; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 171, pl. xliv, 1897; *Ward, Records of Big Game*, ed. 6, p. 221, 1910; *Pocock, Proc. Zool. Soc.* 1910, p. 913; *Blaine, Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 289, 1813.

Redunca redunca, *Trouessart, Cat. Mamm., Suppl.* p. 721, 1905.

Nagor, or Bohor.

Type of *Cervicapra, Redunca*, and *Nagor*.

Typical locality Gori Island, off the coast of Senegal, West Africa.

Size smaller than in *arundinum*, the shoulder-height ranging from about 27 to 28 inches, and the length of the skull from about $9\frac{3}{16}$ inches (225 mm.) to $10\frac{1}{16}$ inches (256 mm.). Skull generally similar to that of *arundinum*, but with a relatively shorter rostrum and upper tooth-row. General colour yellowish, less grizzled and more fulvous than in *arundinum*, and that of head and neck not markedly contrasting with that of body; dark markings on limbs less pronounced than in typical examples of *arundinum* or wanting. Tail shorter and less bushy. Horns relatively shorter and stouter, with the tips more abruptly hooked; the length in good specimens ranging from about 9 to $14\frac{1}{2}$ (in one instance 15) inches.

The distribution includes Ethiopian Africa north of the Zambesi, where it is approximately co-extensive with that of the genus. The local races may be distinguished as follows:—

A. Skull smallest in group—length about $8\frac{5}{16}$ inches (225 mm.); upper row of cheek-teeth very short—$2\frac{9}{16}$ inches (54 mm.); horns short, strongly hooked forwards and inwards. Hair long; general colour dark yellowish fawn *R. r. redunca.*

B. Skull larger; upper tooth-row and horns longer.

a. Skull less massive and shallower vertically—length $10\frac{7}{16}$ inches (255 mm.); length of upper series of cheek-teeth 63 mm.; * horns thinner, longer and more divergent *R. r. cottoni.*

b. Skull more massive and deeper vertically; horns shorter and stouter.

a^{1}. Length of skull $9\frac{1}{2}$ inches (240 mm.), of upper series of cheek-teeth 58 mm.; horns shorter..... *R. r. ugandæ.*

* In the case of very small differences millimetres alone are generally used.

b^1. Skull and horns longer; length of former about $10\frac{7}{16}$ inches (255 mm.).
 a^2. Length of skull 255 mm., of upper series of cheek-teeth 62 mm.; general axis of horns rising above frontal plane.
 a^3. Horns shorter and moderately curved ... *R. r. bohor.*
 b^3. Horns longer and curved outwards, with the tips much inbent.
 a^4. Size larger; colour darker ... *R. r. wardi.*
 b^4. Size smaller; colour lighter ... *R. r. tohi.*
 b^2. Length of skull $10\frac{1}{2}$ inches (256 mm.), of upper series of cheek-teeth 63 mm.; horns slightly lyrate, with their general axis below frontal plane ... *R. r. nigeriensis.*

In the matter of colouring the following five races are characterised as follows :—

A. General colour pale yellowish fawn; hair shorter than in *r. redunca* ... *R. r. nigeriensis.*

B. General colour grizzled fawn.
 a. General tint yellower ... *R. r. bohor*, *R. r. wardi*, and *R. r. cottoni.*
 b. General tint browner ... *R. r. ugandæ.*

A.—Redunca redunca redunca.

Cervicapra redunca redunca, *Rothschild*, *Powell-Cotton's Sporting Trip through Abyssinia*, p. 470, 1902.

Cervicapra redunca typica, *Ward*, *Records of Big Game*, ed. 5, p. 222, 1907, ed. 6, p. 222, 1910; *Alexander*, *From Niger to Nile*, vol. ii, p. 392, 1897; *Lydekker*, *Game Animals of Africa*, p. 231, 1908.

NAGOR.

Typical locality Gori Island, off Senegal.

Size small, shoulder-height about 27 inches. Hair relatively long; general colour dark yellowish fawn, no dark marking on limbs. Skull very small, length about $8\frac{15}{16}$ inches (225 mm.); upper series of cheek-teeth very short, $2\frac{9}{16}$ inches (54 mm.). Horns very short and stout, with the tips hooked strongly forwards and inwards. In the first of two specimens recorded in Ward's list which can be definitely referred to this race the length is 10 inches, the girth $4\frac{3}{4}$, and the tip-to-tip interval $6\frac{1}{4}$ inches.

The range extends from Senegal and Gambia to the Gold Coast.

46. 10. 23. 17. Skin, immature. West Africa; collected by Mr. J. Whitfield. *Presented by the Earl of Derby*, 1846.

93. 3. 5. 1. Skull, with horns. Gambia; collected by Governor Carter. *Presented by Dr. P. L. Sclater*, 1893.

98. 9. 9. 1. Skull, with horns, immature. South bank of Gambia River. *Presented by J. Rowland Ward, Esq.*, 1898.

11. 6. 10. 10. Skull, with horns, and skin. Upper Gambia. *Presented by G. Fenwick Owen, Esq.*, 1911.

B.—Redunca redunca bohor.

Antilope redunca, *Rüppell, Neue Wirbelth. Abyssin.* p. 30, pl. vii, fig. 1, 1835–40, nec *Pallas.*

Redunca bohor, *Rüppell, Verzeichniss Mus. Senckenberg.* pt. i, p. 50, 1842; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 169, 1869; *Trouessart, Cat. Mamm., Suppl.* p. 722, 1905; *Lönnberg, Sjöstedt's Kilimandjaro-Meru Exped., Mamm.* p. 44, 1908.

Antilope (Redunca) bohor, *Wagner, Schreber's Säugthiere, Suppl.* vol. iv, p. 425, 1844, vol. v, p. 432, 1855.

Cervicapra bohor, *Sundevall, K. Svenska. Vet.-Ak. Handl.* 1844, p. 195, 1846; *Ward, Records of Big Game*, p. 93, 1892, *partim; Lydekker, Horns and Hoofs*, p. 229, 1893, *Great and Small Game of Africa*, p. 305, 1899, *partim; Sclater and Thomas, Book of Antelopes*, vol. ii, p. 165, 1897, *partim; Thomas, Ann. Mag. Nat. Hist.* ser. 7, vol. vi, p. 304, 1900; *Blaine, ibid.* ser. 8, vol. xi, p. 288, 1913.

(?) Eleotragus bohor, *Temminck, Esquiss. Zool. Guiné*, p. 191, 1853.

Eleotragus reduncus, *Heuglin, Nova Acta Ac. Cæs. Leop.-Car.* vol. xxx, pt. 2, p. 11, 1863; (?) *Sclater, Proc. Zool. Soc.* 1864, p. 110; (?) *Jentink, Cat. Mamm. Leyden Mus.* (*Mus. Pays-Bas*, vol. xi) p. 150, 1892.

Cervicapra (?) adrob, *Heuglin, Reise Nordost-Afrika*, vol. ii, p. 109, 1877.

(?) Eleotragus arundinaceus, *True, Proc. U.S. Nat. Mus.* vol. xv, p. 472, 1892, nec *Gray.*

Cervicapra redunca bohor, *Rothschild, Powell-Cotton's Sporting Trip through Abyssinia*, p. 467, 1902; *Lydekker, Game Animals of Africa*, p. 231, 1908; *Ward, Records of Big Game*, ed. 6, p. 223, 1910.

Bohor.

Typical locality Central Abyssinia.

Size rather larger than in typical race. General colour yellowish grizzled fawn; dark limb-markings sometimes present. Skull large, length $10\frac{7}{16}$ inches (255 mm.), massive and deep; length of upper series of cheek-teeth $2\frac{7}{16}$ inches (62 mm.). Horns relatively short and stout, although longer

than in *redunca;* their general axis rising above level of frontal plane; in good specimens the length ranges from 9¼ to 10¾ inches and the girth from 5½ to 6, with a tip-to-tip interval of from 5 to 11¾ inches.

Blaine, on account of the larger size of the skull and teeth, regards this and the following races as specifically distinct from the true *redunca.*

1. 7. 6. 16. Skull, with horns, and head-skin. Gorabountha (5,600 feet), Hawash, Abyssinia.

Presented by A. E. Pease, Esq., 1901.

6. 11. 1. 62. Skull, with horns, and skin. Near Lake Helene, Omo River, N.E. Abyssinia; collected by Mr. P. Zaphiro. *Presented by W. N. McMillan, Esq.*, 1906.

C.—Redunca redunca wardi.

Cervicapra bohor, *Sclater, List Anim. Zool. Gardens*, p. 144, 1883; *Günther, Proc. Zool. Soc.* 1890, p. 604 *Jackson, Big Game Shooting* (*Badminton Libr.*) vol. i, pp. 285 and 294, 1894; *Matschie, Säugeth. Deutsch-Ostafrika*, p. 128, 1895; nec *Sundevall.*

Cervicapra redunca wardi, *Thomas, Ann. Mag. Nat. Hist.* ser. 7, vol. vi, p. 304, 1900; *Rothschild, Powell Cotton's Sporting Trip through Abyssinia*, p. 471, 1902; *Lydekker, Game Animals of Africa*, p. 231, 1908; *Ward, Records of Big Game*, ed. 6, p. 224, 1910; *Hollister, Smithson. Misc. Collect.* vol. lvi, no. 2, p. 7, 1910; *Roosevelt, African Game Trails*, p. 487, 1910; *Cabrera, Cat. Met. Mam. Mus. Madrid*, p. 126, 1912.

Redunca redunca wardi, *Trouessart, Cat. Mamm., Suppl.* p. 722, 1905.

Cervicapra bohor wardi, *Blaine, Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 289, 1913.

Typical locality Mau Plateau, British East Africa.

Closely allied to the last, with which it agrees generally in cranial and dental measurements, and also in colour; black markings on legs present. The chief distinction seems to be in the horns, which are rather larger, and have the points much turned inwards; good specimens range from 10 to 13¾ inches in length, with a girth of from 4½ to 7⅜, and a tip-to-tip interval of from 4½ to 9¼ inches.

Thomas regarded this race as nearly allied to *redunca redunca,* which he considered specifically distinct from *r. bohor.* Blaine affiliates it to the latter.

The range includes portions of Uganda adjacent to British East Africa.

0. 8. 15. 1. Skull, with horns, and skin. Mau Plateau, British East Africa; collected by Sir F. J. Jackson, K.C.M.G., C.B. Type. *Presented by J. Rowland Ward, Esq.*, 1900.

0. 8. 15. 2. Skull and skin, female. Same locality and collector. *Same history.*

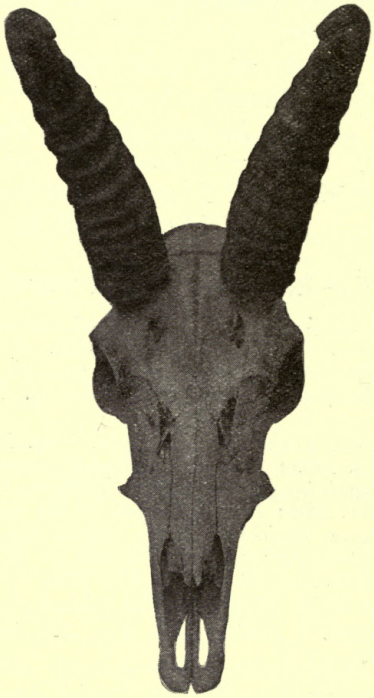


Fig. 25.—Skull and Horns of Eastern Bohor Reedbuck (*Redunca redunca wardi*).

95. 9. 7. 1. Skin, mounted, and skull. Border of British and German East Africa to the north-east of Kilimanjaro. *Presented by Major R. W. E. Kenwick*, 1895.

1. 8. 9. 71. Skull, with horns, immature. Ravine Station, British East Africa.

Presented by Sir H. H. Johnston, K.C.M.G., K.C.B., 1901.

1. 8. 9. 72–73. Two skulls and skins, immature female. Same locality. *Same history.*

1. 8. 9. 74. Skull, with horns. Nandi, British East Africa. *Same history.*

1. 8. 9. 75–76. Two skulls, with horns (fig. 25). Ravine Station, British East Africa. *Same history.*

63. 7. 7. 12. Skull, with horns, and imperfect skin. Uganda. *Presented by Capt. J. H. Speke*, 1863.

89. 8. 3. 1. Skull, with horns, immature. Near Kilimanjaro, Masailand. *Presented by H. C. V. Hunter, Esq.*, 1889.

82. 1. 27. 2. Skull, with horns. East Africa; collected by Sir John Kirk. Length of horns on front curve $13\frac{3}{4}$, basal girth $5\frac{1}{8}$, tip-to-tip interval $8\frac{1}{8}$ inches; this being the maximum horn-length recorded by Ward in 1910.

Purchased, 1882.

D.—Redunca redunca tohi.

Redunca redunca tohi, *Heller, Smithson. Misc. Collect.* vol. lxi, No. 7, p. 10, 1913.

Tohi.

Typical locality Mariakani, British East Africa.

Type in U. S. National Museum.

Allied to *wardi* but smaller (basal length of skull $8\frac{13}{16}$ inches = 223 mm.), and lighter and purer tawny in colour, the black "lining" on back being less distinct, and the dark leg-streaks narrower or wanting.

No specimen in collection definitely referable to this race.

E.—Redunca redunca cottoni.

Cervicapra redunca cottoni, *Rothschild, Powell-Cotton's Sporting Trip through Abyssinia*, p. 470, 1902; *Lydekker, Game Animals of Africa*, p. 231, 1908, *Field*, vol. cxx, p. 1175, 1912.

Cervicapra redunca donaldsoni, *Rothschild, op. cit.* p. 471, 1902; *Lydekker, loc. cit.* 1908, identified with cottoni, *Field, op. cit.* 1912.

Redunca redunca cottoni *and* donaldsoni, *Trouessart, Cat. Mamm., Suppl.* p. 722, 1905.

Cervicapra bohor cottoni, *Blaine, Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 289, 1913.

Typical locality Kordofan, between the Bahr-el-Zerafe and the Bahr-el-Jebel.

Type not identified.

General colour similar to that of *r. bohor*, but horns longer, thinner, and more divergent, with more or less

marked incurving at tips. Skull relatively slight and shallow vertically; length $10\frac{7}{16}$ inches (255 mm.); length of upper series of cheek-teeth $2\frac{1}{2}$ inches (63 mm.). Fine horns measure from 13 to 15 inches, with a girth of from $4\frac{3}{4}$ to 6 inches, and a tip-to-tip interval ranging from $7\frac{1}{2}$ to $18\frac{1}{4}$ inches.

Of the three under-mentioned heads obtained by Capt. Gunthorpe in the Dinder Valley—a tributary of the Blue Nile—one agrees with a typical *cottoni*, a second is clearly a *donaldsoni*, and the third of an intermediate type. These specimens, in conjunction with a fourth given to the writer

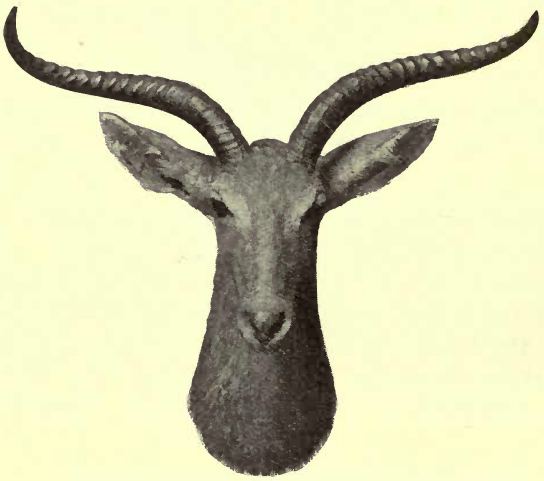


FIG. 26.—HEAD OF SUDANI BOHOR REEDBUCK (*Redunca redunca cottoni*), from Mongalla.
Length of horns 16 inches, girth 5 inches, tip-to-tip interval $23\frac{3}{8}$ inches.

by Colonel Gunthorpe, show that these two supposed races are inseparable. In the writer's specimen the interval between the horn-tips is only $6\frac{1}{4}$ inches, whereas in specimens from the Dinder and Blue Nile valleys catalogued in the sixth edition of Ward's *Records of Big Game*, this interval ranges from 15 to 18 inches.

The range extends from Kordofan, the White Nile, and the Isle of Meroë to the east of Lado and western Somaliland.

1. 8. 8. 42. Skull, with horns, and skin. Kaka, White Nile, Sudan. *Presented by R. Mc. D. Hawker, Esq.*, 1901.

8. 1. 15. 1. Skull, with horns. Dinder Valley, Blue Nile. *Presented by J. Rowland Ward, Esq.*, 1908.

0. 11. 7. 17. Skull, with horns. North of Lake Rudolf. *Presented by Dr. Donaldson Smith*, 1900.

12. 11. 13. 3. Mounted head. Dinder Valley, Blue Nile; shot by Capt. M. E. T. Gunthorpe. The horns are of the character of typical *cottoni*.

Presented by Col. E. J. Gunthorpe, 1912.

12. 11. 13. 4. Mounted head. Same locality and donor. The horns are somewhat intermediate between those of the preceding and the following specimen.

Same history.

12. 11. 13. 5. Mounted head. Same locality and collector. The tips of the horns show the strongly marked inbending characteristic of *donaldsoni*. *Same history.*

F.—Redunca redunca nigeriensis.

Cervicapra bohor nigeriensis, *Blaine, Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 290, 1913.

Cervicapra redunca typica, *Alexander, From Niger to Nile*, vol. ii, p. 392, 1907, nec *Lydekker*.

Typical locality Ibi, Northern Nigeria.

Similar in size to *r. wardi*, but with the body-colour of a more uniform shade of fawn, as in *r. redunca*. General colour light fulvous fawn, slightly darker along middle line of back, and paler on flanks, where it merges into white of underparts; a pale dusky stripe down front of lower portion of fore-legs. Hair short and close, not waved. Horns with the main axis depressed below level of frontal plane; stout at the base, then slightly curving downwards and outwards, and finally hooking forwards at the tips, although not so strongly as in *r. redunca* or *r. bohor;* good specimens range from 9 to $10\frac{5}{8}$ inches in length, with a girth of from $4\frac{1}{2}$ to $6\frac{1}{2}$, and a tip-to-tip interval of from $4\frac{1}{4}$ (in one instance $2\frac{7}{8}$) to $7\frac{3}{4}$ inches. Length of skull $10\frac{1}{2}$ inches (256 mm.), of upper series of cheek-teeth 63 mm.

7. 7. 8. 234. Skull, with horns. Ibi, Northern Nigeria; Alexander-Gosling Expedition. Type.

Presented by the Alexander-Gosling Expedition, 1907.

4. 7. 9. 11–12. Skull and frontlet, with horns. Respectively from Sokoto and Zimguru, Northern Nigeria.
Presented by Capt. A. Cock, 1904.

5. 5. 10. 10. Imperfect skull, with horns. Wasé, Northern Nigeria. *Presented by Dr. H. K. W. Kumm*, 1905.

7. 7. 8. 235–236. Two skulls and skins. Ibi; Alexander-Gosling Expedition.
Presented by the Alexander-Gosling Expedition, 1907.

7. 7. 8. 268. Head, skin. Same locality and collection.
Same history.

G.—Redunca redunca ugandæ.

Cervicapra bohor ugandæ, *Blaine*, *Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 291, 1913.

Typical locality Ankoli, south-western Uganda.

Size rather smaller than in *r. nigeriensis*, and skull and horns proportionately shorter. General colour the yellow grizzled fawn of *r. bohor*, but with a brownish tinge, so that it appears less fulvous. Horns short and stout, without a pronounced forward hook at tip. Length of skull 9½ inches (240 mm.), of upper series of cheek-teeth 2¼ inches (56 mm.).

5. 4. 3. 35. Skull, with horns, and skin. South-western Ankoli, Uganda; collected by Mr. W. G. Doggett. Type.
Presented by Lieut.-Col. C. Delmé-Radcliffe, 1905.

5. 4. 3. 36. Skull, with horns, and skin, immature. Same locality and collector. *Same history.*

5. 11. 16. 1. Skull, with horns. South-western Uganda.
Presented by F. H. Lecky, Esq., 1905.

1. 7. 15. 2. Skull, with horns. South of Albert Edward Nyanza. *Presented by J. E. S. Moore, Esq.*, 1901.

III. REDUNCA FULVORUFULA.

Antilope fulvorufula, *Afzelius*, *Nova Acta Soc. Upsal.* vol. vii, p. 250, 1815; *Goldfuss*, *Schreber's Säugthiere*, vol. v, p. 1226, 1818; *H. Smith*, *Griffith's Animal Kingdom*, vol. iv, p. 239, 1827.

Antilope lalandia, *Desmoulins*, *Dict. Class. Hist. Nat.* vol. i, p. 445, 1822; *Lesson*, *Man. Mamm.* p. 378, 1827.

Antilope landiana, *Desmarest*, *Mammalogie*, vol. ii, p. 462, 1822; *Owen*, *Proc. Zool. Soc.* 1836, p. 38, *Anat. Vertebrates*, vol. iii, p. 634, 1868.

Antilope eleotragus, *Lichtenstein, Darstellung. Säugeth.* pl. 19, 1827; *Smuts, Enum. Mamm. Cap.* p. 75, 1832; *Schinz, Mon. Antilop.* p. 15, pl. xiv, 1848; nec *Schreber.*

Antilope lalandii, *J. B. Fischer, Synop. Mamm.* p. 467, 1829; *Laurillard, Dict. Univ. Hist. Nat.* vol. i, p. 621, 1841; *Schinz, Synop. Mamm.* vol. ii, p. 415, 1845.

Redunca lalandii, *A. Smith, S. African Quart. Journ.* vol. ii, p. 210, 1834.

Cervicapra eleotragus, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 194, 1846, nec *Blainville.*

Eleotragus arundinaceus, *Temminck, Esquiss. Zool. Guiné*, p. 191, 1853, nec *Bechstein.*

Redunca eleotragus, *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 169, 1869; *Brehm, Thierleben, Säugethiere*, vol. iii, p. 222, 1880; nec *A. Smith.*

Eleotragus eleotragus, *Jentink, Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 130, 1887, *Cat. Mamm. Leyden Mus.* (*ibid.* vol. xi) p. 159, 1892, *nec* Antilope eleotragus, *Schreber.*

Eleotragus redunca, *Bryden, Kloof and Karroo*, p. 298, 1889, nec *Gray.*

Cervicapra redunca, *Günther, Proc. Zool. Soc.* 1890, p. 604, nec *Sundevall.*

Cervicapra lalandii, *Nicolls and Eglington, Sportsman in S. Africa*, p. 34, 1892; *Lydekker, Horns and Hoofs*, p. 228, 1893; *Rendall, Proc. Zool. Soc.* 1895, p. 359; *Ward, Records of Big Game*, ed. 2, p. 132, 1896.

Cervicapra fulvorufula, *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 175, pl. xlv, 1897; *Lydekker, Great and Small Game of Africa*, p. 305, 1899, *Game Animals of Africa*, p. 227, 1908; *W. L. Sclater, Fauna S. Africa, Mamm.* vol. i, p. 197, 1900; *Ward, Records of Big Game*, ed. 6, p. 218, 1910; *Blaine, Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 290, 1913.

Cervicapra fulvorufula subalpina, *Kirby, Proc. Zool. Soc.* 1897, p. 879.

Redunca fulvorufula, *Trouessart, Cat. Mamm., Suppl.* p. 722, 1905.

Oreodorcas fulvorufula, *Heller, Smithson. Misc. Collect.* vol. lx, no. 8, p. 13, 1912.

Rooi Rhebok.

Type of *Orcodorcas.*

Typical locality eastern Cape Colony.

A very distinct species, of the approximate size of *redunca redunca*, distinguished from both the preceding species by the relatively greater interorbital width of the skull, its shorter rostrum and larger orbits, as well as by the shorter and straighter horns, which are less hooked at the tips.

General colour grizzled greyish fawn, tinged with rufous, especially on the head and neck, where it contrasts with the body-colour; chin, upper portion of throat, and under-parts, as well as inner sides of limbs, white; dark leg-markings

inconspicuous or wanting; tail reaching about to level of groin, and very bushy, fawn above, and white below. Good horns range in length from 7 to $8\frac{7}{8}$ inches, with a girth of from $3\frac{1}{2}$ to $5\frac{1}{8}$, and a tip-to-tip interval of from 3 to 6 inches.

In the skull the tympanic sheath, which encloses the tympano-hyal pit, is low, and does not extend downwards on sides of bullæ; knobbed processes of basioccipital small and short; facial portion of lachrymal long, narrow, and extending on orbit well behind termination of nasal; orbit large, its vertical diameter one-half length of nasal; infra-orbital vacuity situated posteriorly above front end of penultimate upper premolar; masseter knob on sides of maxillæ small; pit at base of condyles posterior to bullæ deep; lachrymo-nasal sinus narrow; premaxillæ long. In the more typical members of the genus the skull differs by the longer tympanic sheath, the greater development of the knobbed processes of the basioccipital, the smaller orbit, and the wider and shorter lachrymal.

The range includes the eastern districts of Africa south of the Zambesi, more especially Natal, Zululand, and Bechuanaland, and thence through British East Africa to Gallaland.

The races are distinguishable as follows:—

A. Length of skull $9\frac{1}{16}$ inches (230 mm.), of upper series of cheek-teeth $2\frac{3}{8}$ inches (60 mm.).. *R. f. fulvorufula.*

B. Length of skull $8\frac{15}{16}$ inches (225 mm.), of upper series of cheek-teeth $2\frac{1}{4}$ inches (57 mm.).

a. Typically a dark nose-stripe..... *R. f. chanleri.*

b. Typically no dark nose-stripe..... *R. f. shoana.*

A.—Redunca fulvorufula fulvorufula.

Typical locality eastern Cape Colony.

Characters as above.

630, *d.* Skull, with horns. South Africa.
Presented by Dr. W. J. Burchell, about 1817.

43. 6. 6. 12. Skull and skin, female. Cape Colony; collected by Dr. Brandt. *Purchased*, 1843.

51. 5. 5. 6. Skull, with horns. Orange River district.
Purchased (*Argent*), 1851.

51. 5. 5. 6. Skull, female. Same locality. *Same history.*

41. 12. 25. 3. Skin, mounted, provisionally referred to this species. Said to be of South African origin.

Purchased (*Cross*), 1841.

93. 2. 4. 1. Skull, with horns. Northern Zululand.

Presented by A. H. Neumann, Esq., 1893.

94. 1. 4. 1. Skull, with horns. Figtree Creek, De Kaap, Barberton, Transvaal. *Presented by Dr. P. Rendall*, 1894.

94. 11. 4. 4. Skull, immature female. Same locality.

Same history.

94. 4. 3. 2. Skull and skin, immature female. Lower Umvolusi Valley, Zululand.

Presented by the Christiania Museum, 1894.

98. 9. 10. 3. Skin. Kruger's Post, Transvaal.

Presented by F. V. Kirby, Esq., 1898.

95. 8. 16. 1. Skull, female. Figtree Creek, De Kaap.

Presented by Dr. P. Rendall, 1895.

98. 9. 10. 1. Skull, with horns, and skin. Steenkampberg, Transvaal. Belongs to the so-called *alpina*.

Same history.

98. 9. 10. 2. Skin, female. Same locality. *Same history.*

3. 3. 6. 52. Immature specimen, in spirit. Deelfontein, Cape Colony; collected by Mr. C. H. B. Grant.

Presented by Lieut.-Col. A. T. Sloggett, C.M.G., 1903.

4. 12. 3. 106. Skull, with horns, and skin (head-skin separate). Alatwa district, Zululand; same collector.

Presented by C. D. Rudd, Esq., 1904.

B.—Redunca fulvorufula chanleri.

Cervicapra chanleri, *Rothschild, Novit. Zool.* iii., p. 53, 1895; *Chanler, Through Jungle and Desert*, p. 431, 1896; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 183, 1897.

Cervicapra fulvorufula chanleri, *Jackson, Great and Small Game of Africa*, p. 317, 1899; *O. Neumann, Sitzber. Ges. nat. Freunde*, 1902, p. 99; *Lydekker, Game Animals of Africa*, p. 228, 1908; *Ward, Records of Big Game*, ed. 6, p. 220, 1910; *Blaine, Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 290, 1913.

Redunca chanleri, *Trouessart, Cat. Mamm. Suppl.* p. 722, 1905.

Redunca fulvorufula chanleri, *Roosevelt, African Game Trails*, p. 417, 1910.

Typical locality mountains east of Kenia, British East Africa.

Type in Tring Museum.

Skull-dimensions less than in typical race, as recorded under heading of species. Typically, according to O. Neumann, a dark stripe on nose.

95. 5. 15. 1. Cast of type skull. Original (in Tring Museum) from mountains east of Kenia.

Presented by J. Rowland Ward, Esq., 1895.

98. 10. 13. 1. Skull, with horns, and skin, immature. Kedong Encampment, British East Africa.

Presented by R. W. Moffat, Esq., 1898.

0. 10. 5. 3–4. Two skulls, with horns, and skins, one immature. East of Kariendus River, British East Africa.

Presented by C. S. Betton, Esq., 1900.

0. 10. 5. 6. Skull, immature female. Same locality.

Same history.

0. 3. 27. 21–22. Two skins. Ella Doulan, British East Africa. *Presented by the Lord Delamere*, 1900.

2. 12. 2. 1–2. Head, mounted, and two skins. East of Lake Margherita, East Africa.

Presented by the Lord Hindlip, 1902.

4. 12. 6. 15–16. Two skulls, with horns, and a skin. Fort Hall, British East Africa.

Presented by S. L. Hinde, Esq., 1904.

10. 1. 13. 3. Skull, with horns, and skin. Kedong Valley, British East Africa. *Presented by Major G. E. Tuson*, 1910.

C.—Redunca fulvorufula shoana.

Cervicapra fulvorufula shoana, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1902, p. 99; *Lydekker, Game Animals of Africa*, p. 228, 1908.

Typical locality Shoa.

Type in collection of Dr. O. Neumann.

Distinguished from *chanleri* by absence of dark nose-stripe and certain small details in the skull and horns; the absence or presence of the nose-stripe (which may be present in *arundinum*) in *chanleri* was considered of no importance by Sclater and Thomas.

6. 11. 1. 63. Skull, with horns, and skin, provisionally referred to this somewhat doubtful race. Jaha Boru, Arusi-Gallaland; collected by Mr. P. Zaphiro.

Presented by W. N. McMillan, Esq., 1906.

III. Genus KOBUS.

Kobus, *A. Smith, Illustr. Zool. S. Africa, Mamm.* pt. xii, pl. xxviii, 1840; *Rütimeyer, Abh. schweiz. pal. Ges.* vol. iv, p. 60, 1877; *Pocock, Proc. Zool. Soc.* 1910, 916.

Kolus, *Gray, List Mamm. Brit. Mus.* p. 159, 1843, (?) errorim.

Cobus,* *Buckley, Proc. Zool. Soc.* 1876, p. 284; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 95, 1896.

Robus, *Zittel. Handbuch Palæont.* vol. iv, *Mamm.* pp. 417 and 729, 1893, errorim.

Size large or medium; build generally heavy. Horns of male long, lunate or more or less sublyrate, and heavily ridged for the greater part of their length; muffle normal; rudimentary face-glands,† but no bare subauricular patch; tail relatively long, reaching about to the hocks, with a ridge of hair on dorsal surface and a terminal tuft; foot-glands wanting; inguinal glands absent, or represented by a single pair of pouches; coat usually hairy; skull massive, with large lachrymal vacuities, large auditory bullæ, and the premaxillæ reaching the long nasals.

The distribution is practically the same as that of the subfamily.

The genus is divisible into the following three subgeneric groups:—

A. No inguinal glands; coat grizzled; hair of back not reversed. Size large; horns sublunate, inclining forwards superiorly; neck heavily maned ... *Kobus.*

B. A single pair of inguinal pouches; coat not grizzled; hair of back usually reversed; neck not heavily maned.

a. Size medium; coat long and rough, horns sublyrate, with a more or less marked double (sigmoid) flexure *Onotragus.*

b. Size smaller; coat typically short and smooth; horns sublyrate, without distinct double flexure *Adenota.*

* This is undoubtedly the proper Latinised form of the name, which, according to the Strickland code, ought to be employed.

† See Pocock, *op. cit.* p. 916.

1. Subgenus **KOBUS.**

Large, heavily-built antelopes, with coarse, grizzled coat, not reversed on back, heavily maned neck, and, in the males, long, stout sublunate, forwardly inclined horns.

The two species are distinguished as follows:—

A. A white elliptical band on rump *K. ellipsiprymnus.*
B. No white rump-band *K. defassa.*

Distribution co-extensive, in suitable localities, with that of the genus.

I. KOBUS ELLIPSIPRYMNUS.

Antilope ellipsiprymnus, *Ogilby*, *Proc. Zool. Soc.* 1833, p. 47, *Penny Encylopædia*, vol. ii, p. 88, 1834; *Owen*, *Proc. Zool. Soc.* 1836, p. 38; *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. iv, p. 434, 1844, vol. v, p. 434, 1855; *Peters*, *Reise nach Mossambique*, *Säugeth.* p. 189, 1852.

Aigoceros ellipsiprymnus, *A. Smith*, *S. African Quart. Journ.* vol. ii, p. 186, 1834.

Aigocerus ellipsiprymnus, *Harris*, *Wild Sports S. Africa*, p. 387, 1839, ed. 5, p. 351, 1852, *Wild Anim. S. Africa*, p. 71, pl. xiv, 1840.

Kobus ellipsiprymnus, *A. Smith*, *Illustr. Zool. S. Africa*, *Mamm.* pt. xii, pls. xxviii and xxix, 1840; *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 232, 1846, ser. 3, vol. iv, p. 296, 1859, *Proc. Zool. Soc.* 1850, p. 130, *Knowsley Menagerie*, p. 15, 1850, *Cat. Ungulata Brit. Mus.* p. 99, 1852, *Cat. Ruminants Brit. Mus.* p. 15, 1872, *Hand-List Ruminants Brit. Mus.* p. 86, 1873; *Gerrard*, *Cat. Bones Mamm. Brit. Mus.* p. 239, 1862; *Sclater*, *Proc. Zool. Soc.* 1864, p. 101; *Fitzinger*, *Sitzber k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 176, 1869; *Drummond*, *Large Game S. Africa*, p. 426, 1875; *Brehm*, *Thierleben*, *Säugethiere*, vol. iii, p. 224, 1880; *Flower and Garson*, *Cat. Osteol. Mus. R. Coll. Surg.* pt. ii, p. 268, 1884; *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 131, 1887, *Cat. Mamm. Leyden Mus.* (*ibid.* vol. xi) p. 159, 1892, *Notes Leyden Mus.* vol. ix, p. 172, 1887; *Nicholls and Eglington*, *Sportsman in S. Africa*, p. 44, 1892; *True*, *Proc. U.S. Nat. Mus.* vol. xv, p. 471, 1892; *Pocock*, *Proc. Zool. Soc.* 1904, vol. i, p. 4, 1910, p. 916; *O. Neumann*, *Sitzber. Ges. nat. Freunde*, 1905, p. 93; *Broun*, *Proc. Zool. Soc.* 1905, vol. ii, p. 296; *Matschie*, *Sitzber. Ges. nat. Freunde*, 1910, p. 409, *Mitt. Zool. Mus. Berlin*, vol. v, pt. 3, p. 556, 1911; *Cabrera*, *Cat. Met. Mam. Mus. Madrid*, p. 126, 1912.

Antilope (Œgocerus) ellipsiprymnus, *Lesson*, *Nouv. Tabl. Règne Anim.*, *Mamm.* p. 180, 1842.

Kolus ellipsiprymnus, *Gray*, *List Mamm. Brit. Mus.* p. 159, 1843.

Cervicapra ellipsiprymnus, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 195, 1846.

Heleotragus ellipsiprymnus, *Kirk, Proc. Zool. Soc.* 1864, p. 658.

Antilope elypsiprymnus, *Owen, Anat. Vertebrates*, vol. iii, p. 634, 1868.

Cobus ellipsiprymnus, *Buckley, Proc. Zool. Soc.* 1876, p. 284; *Selous, ibid.* 1881, p. 758, *A Hunter's Wanderings in S. Africa*, p. 218, 1881; *Crawshay, Proc. Zool. Soc.* 1890, p. 651; *Sclater, ibid.* 1891, p. 326, 1892, p. 471, 1893, p. 505, pl. xxxix; *Flower and Lydekker, Study of Mammals*, p. 340, 1891; *Ward, Records of Big Game*, p. 84, 1892, ed. 6, p. 190, 1910; *Lydekker, Horns and Hoofs*, p. 223, 1893, *Great and Small Game of Africa*, p. 269, 1899, *Game Animals of Africa*, p. 194, 1908; *Bryden, Gun and Camera*, p. 504, 1893; *Barkley, Proc. Zool. Soc.* 1894, p. 131; *Swayne, ibid.* p. 316, *Thirteen Trips to Somali*, p. 307, 1894; *Matschie, Säugeth. Deutsch-Ostafrika*, p. 132, 1895; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 97, pl. xxxii, 1896; *W. L. Sclater, Fauna S. Africa, Mamm.* vol. i, p. 185, 1900; *Rothschild, Powell-Cotton's Sporting Trip through Abyssinia*, p. 466, 1902; *Letcher, Big Game N.E. Rhodesia*, p. 206, 1911.

WASSERBOK, or WATERBUCK.

Type of the genus.

Typical locality the district between Lataku and the west coast, South Africa.

Height at shoulder from about 48 to 53 inches;* coat long and coarse; general colour grizzled brownish grey, tending to blackish on the back, with the bases of the hairs whitish, paler on flanks, and passing into white on middle line of under-parts and inner sides of upper portion of hind-limbs; a conspicuous white elliptical band on the rump extending downwards on each side to the flanks; feet dark brown, with a white band above hoofs; sides of forehead dark brown; a white line round nose, lips, and chin, and another over and in front of each eye; an irregular band round neck greyish white; ears hairy, white internally, and blackish externally, except at the base, where they are brownish, about 7½ inches in length; tail dark brown above and white beneath, about 11 inches long, exclusive of terminal tuft (4 inches). Horns large, and heavy, sublunate, inclining backwards and outwards at base, and then forwards and inwards towards and at the tips, heavily ridged for about three-fourths their length. Fine horns measure from 31 to

* Sclater and Thomas give the height as 39 inches; Nicholls and Eglington as "often considerably more than 4 feet."

36¼ inches in length, with a girth of from 8¼ to 10 inches, and a tip-to-tip interval ranging from 13¼ to 29¼ inches.

The range extends from South Africa north of the Limpopo along the coast-region through Nyasaland to German and British East Africa, and thence to the Shebeli River, Somaliland.

The following names have been applied to local forms of this species, but whether any or all are entitled to rank as distinct subspecies, the material in the Museum is insufficient to determine. Some at least are probably typified by individual herds rather than by local races.

a. Kobus ellipsiprymnus pallidus, *Matschie, Sitzber. Ges. nat. Freunde*, 1910, p. 410; *Lönnberg, K. Svenska Vet.-Ak. Handl.* vol. xlviii, no. 5, p. 161, 1912.

Typical locality Shebeli Valley, Somaliland.

Type in collection of Major Powell-Cotton, at Quex Park, Birchington, Kent.

A somewhat pale form, in which the general colour is light brown (fawn), purest on the forehead, legs, and root of tail, on the neck and back with black tips to the hairs, on the sides mingled with grey, on the feet darker; white eye-streak short; white of chin not extending to angle of mouth; throat and chest very light, with an admixture of grey and sepia-brown hairs; upper part of ears margined with dark brown; sides of head fawn-brown, strongly suffused with sepia-brown; hoof-band complete, as in typical race. Based on two immature specimens.

b. Kobus ellipsiprymnus thikæ, *Matschie, Sitzber. Ges. nat. Freunde*, 1910, p. 411; *Lönnberg, K. Svenska Vet.-Ak. Handl.* vol. xlviii, art. 5, p. 161, 1912.

Typical locality Thika Valley, north of the Dönyo-Sabuk, Kenia district, British East Africa.

Type in collection of Major Powell-Cotton.

Forehead burnt-umber; upper side of nose blackish grey-brown, with a very narrow white line round muffle; white eye-streak twice as long as in last, not pure white, but mingled with brown hairs; sides of head light brownish grey strongly suffused with sepia; white of chin extending to

angle of mouth; throat and chest warm sepia or sooty; back reddish sepia, with little grey on the sides, but the flanks light umber-brown; hoof-band incomplete; light neck-band (as in the preceding) stopping short of root of ear, which it reaches in typical race. Skull relatively wide.

c. Kobus ellipsiprymnus kondensis, *Matschie*, *Mitt. Zool. Mus. Berlin*, vol. v, pt. 3, p. 556, 1911.

Typical locality Mwaya, at north-western end of Lake Nyasa, S.W. Kondeland, German East Africa.

Type in Zoological Museum, Berlin.

Resembles *K. e. thikæ* in the incompleteness of the white hoof-band and the dark colour of the remainder of the foot, but is distinguished by the general colour being less dark; on the hind half of the neck, the shoulders, and the sides of the body the tint is not lighter than broccoli-brown; on the middle of the back and upper half of legs much the same, and only on the feet and lower part of legs umber-brown.

d. Kobus ellipsiprymnus lipuwa, *Matschie*, *Mitt. Zool. Mus. Berlin*, vol. v, pt. 3, p. 560, 1911.

Typical locality between Mwaya and Mbaka Valleys, German East Africa.

Type in Zoological Museum, Berlin.

Named on the evidence of the skull and horns, for the characteristics of which reference must be made to the original description, as it is too long to quote.

e. Kobus ellipsiprymnus kulu, *Matschie*, *Mitt. Zool. Mus. Berlin*, vol. v, pt. 3, p. 561, 1911.

Typical locality Maliwe, westward of Kilwa, German East Africa.

Type in Zoological Museum, Berlin.

Also named from the skull and horns alone, the description of which is too long and detailed for quotation in this place.

f. Kobus ellipsiprymnus canescens, *Lönnberg*, *K. Svenska Vet.-Ak. Handl.* vol. xlviii, no. 5, p. 160, 1912.

Typical locality Guaso-nyiro, British East Africa.

Type in Royal Swedish Museum of Natural History.

Stated to be considerably paler than *thikæ*, without trace of reddish sepia on back, but with more grey on flanks and paler ears. Smaller and paler than typical race. In extreme cases the paleness passes into semialbinism.

g. Kobus ellipsiprymnus kuru, *Heller*, *Smithson. Misc. Collect.* vol. lxi, no. 13, p. 6, 1913.

Typical locality Taveta, Kilimanjaro district, British East Africa.

Type in U. S. National Museum.

A large form distinguished from *thikæ* by its darker, sepia-brown general colour; legs darker brown, but nose not darker than body, and presenting but little contrast in colour to forehead.

83. 7. 28. 6. Skin, mounted. Upper Manyami Valley, Mashonaland; collected by F. C. Selous, Esq. Length of horns 33, basal girth 9⅜, tip-to-tip interval 11½ inches; the specimen stands sixth in Ward's 1910 list. *Purchased*, 1913.

83. 7. 28. 6. Skin, mounted, female. Same locality and collector. *Same history.*

42. 4. 11. 7. Skin, mounted. South Africa; collected by Sir Andrew Smith. *Purchased* (*Warwick*), 1842.

48. 7. 13. 2. Frontlet and horns. South Africa. *Purchased* (*Warwick*), 1848.

61. 12. 3. 1. Skull, with horns. Algoa Bay. *Presented by C. Wemys, Esq.*, 1861.

63. 8. 4. 1. Skull, with horns. South Africa. *Presented by G. W. Clapp, Esq.*, 1863.

48. 3. 15. 1. Skull, with horns. South Africa. *Purchased* (*Argent*), 1848.

63. 7. 7. 9. Skull, with horns. Knigani Valley, Ugarama. *Presented by Capt. J. H. Speke*, 1863.

63. 7. 7. 10. Skull, female. Makorta, near Bagamoya. *Same history.*

93. 5. 6. 7–8. Two skulls, with horns. Zomba, Nyasaland; collected by A. Whyte, Esq. *Presented by Sir H. H. Johnston, G.C.M.G., K.C.B.*, 1893.

93. 7. 9. 26–27. Two frontlets and horns. Same locality. *Same history.*

97. 11. 21. 2. Head, mounted. East Africa.
Presented by J. Rowland Ward, Esq., 1897.

10. 12. 17. 1. Head, mounted, and body-skin. Lorian Swamp, British East Africa. This specimen belongs to a pale phase not uncommon in the Lorian Swamp and adjacent parts of the Guaso-nyiro. These pale-coloured Lorian waterbuck, as mentioned by Col. W. H. Broun (*Proc. Zool. Soc.* 1905, p. 297), and also by Lord Gifford in *The Field* of August 6th, 1910, have eyes of the normal colour, and thus are not true albinos. Col. Broun's buck, which was in company with a white doe when shot, was obtained in July, 1904, on the right or north bank of the Guaso-nyiro, about twenty miles to the westward of the Lorian Swamp. Lord Gifford obtained two white bucks on the north bank of that river, where he saw four other examples, as well as a calf on the south bank. He describes having seen a white male and female in company, but otherwise the white individuals were mingled with normally coloured animals. One white calf is recorded as having been seen with a dark dam, but it appeared to have grey patches on the head and back. These accounts indicate that pale-coloured waterbuck are comparatively common in the Lorian district, although they do not herd by themselves. These pale forms are referable to *canescens*, but they suggest a case somewhat analogous to that of the grey reedbucks (*Redunca arundinum*) of the Songwi River, near its entrance into Lake Nyasa (see p. 209). *Presented by Lord Gifford*, 1910.

10. 12. 17. 2. Skull and skin, pale-coloured female. Same locality. *Same history.*

7. 10. 25. 7. Frontlet and horns. Portuguese East Africa. *Presented by F. Vaughan Kirby, Esq.*, 1907.

10. 4. 10. 2. Skull, with horns. Portuguese East Africa. Length of horns 31¾ inches.
Presented by J. Rowland Ward, Esq., 1910.

1. 4. 3. 2. Frontlet and horns. Barotsiland.
Presented by J. Rowland Ward, Esq., 1901.

1. 4. 3. 3. Skull, female. Same locality. *Same history.*

98. 7. 2. 11. Skull, with horns, and skin (head-skin separate). Dan Valley, a tributary of the Juba, East Africa.
Bequeathed by H. Andrew, Esq., 1898.

98. 7. 2. 12. Skin. Same locality. *Same history.*

51. 12. 23. 7–8. Two skulls, female. Locality unknown. *Purchased* (*Stevens*), 1851.

93. 12. 1. 7. Skull, with horns, and skin. Webi Valley, Somaliland; collected by Lieut.-Col. H. G. C. Swayne. This and No. 93. 6. 30. 9 should belong to Matschie's *K. c. pallidus.* *Presented by Dr. P. L. Sclater*, 1893.

93. 6. 30. 9. Skull, female. Shebeli Valley, Somaliland. *Presented by Gen. Sir Arthur Paget, K.C.B.*, 1893.

II. KOBUS DEFASSA.

Antilope defassa, *Rüppell, Neue Wirbelth. Abyssin.* p. 9, pl. iii, 1835–40; *Wagner, Schreber's Säugthiere, Suppl.* vol. iv, p. 423, 1844; *Reichenbach, Säugeth.* vol. iii, p. 133, 1845.

Redunca defassa, *Rüppell, Verzeichniss Mus. Senckenberg*, pt. 1, p. 182, 1842.

Kobus sing-sing, *Gray, List Mamm. Brit. Mus.* p. 159, 1843, *partim.*

Cervicapra defassa, *Sundevall, K. Svenska Vet.-Ak. Handl.* 1844, p. 195, 1846.

Kobus defassa, *Gray, Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 232, 1846; *Heuglin, Nova Acta Ac. Cæs. Leop.-Car.* vol. xxx, pt. 2, p. 15, 1863, *Reise Abyssin.* vol. ii, p. 109, 1877; *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 176, 1869; *Matschie, Sitzber. Ges. nat. Freunde*, 1892, p. 134, 1910, p. 412; *O. Neumann, ibid.* 1895, p. 92; *Alexander, From Niger to Nile*, vol. ii, p. 392, 1907; *Pocock, Proc. Zool. Soc.* 1910, p. 916; *Cabrera, Cat. Met. Mamm. Mus. Madrid*, p. 126, 1912; *Schwarz, Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 495, note, 1913.

Kobus sing-sing, *Gray, Knowsley Menagerie*, p. 15, 1850, *Cat. Ungulata Brit. Mus.* p. 99, 1852, *Cat. Ruminants Brit. Mus.* p. 15, 1872, *Hand-List Ruminants Brit. Mus.* p. 78, 1873, *partim.*

Antilope defassa *var.* abyssinica, *Wagner, Schreber's Säugthiere, Suppl.* vol. v, p. 435, 1855.

Cobus defassus, *Flower and Lydekker, Study of Mammals*, p. 140, 1891; *Lydekker, Horns and Hoofs*, p. 224, 1893.

Kobus defassus, *Jentink, Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 130, 1887; *Jackson, Big Game Shooting* (*Badminton Libr.*) vol. i, pp. 285 and 304, 1894.

Cobus defassa, *Sclater, Proc. Zool. Soc.* 1893, p. 727, 1895, p. 868; *Matschie, Säugeth. Deutsch-Ostafrika*, p. 124, 1895; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 115, pl. xxxvi, 1896; *Pousargues, Ann. Sci. Nat., Zool.* ser. 7, vol. iv, p. 75, 1897; *Lydekker, Great and Small Game of Africa*, p. 269, 1899, *Game Animals of Africa*, p. 199, 1908; *Rothschild, Powell-Cotton's Sporting Trip through Abyssinia*, p. 466, 1902; *Johnston, Uganda Protectorate*, vol. i, p. xi, pl. facing p. 192, 1902; *Lönnberg, Arkiv Zool.* vol. iv, no. 3, p. 7, 1907; *Alexander, From Niger to Nile*, vol. ii, p. 329, 1907; *Drake-Brockman, Mamm. of Somali.* p. 72, 1910; *Ward, Records of Big Game*, ed. 6, p. 193, 1910.

DEFASSA, or SING-SING.

Type of *Kolus*.

Typical locality near Lake Tana, Abyssinia, in the neighbourhood of the upper course of the Blue Nile.

Distinguished from the type species by the elliptical white ring on the rump being replaced by a large white

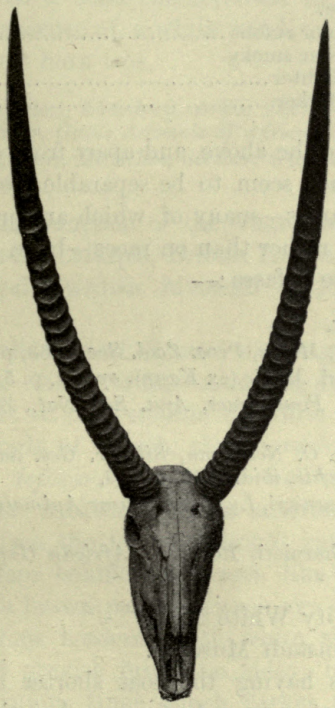


FIG. 27.—SKULL AND HORNS OF UGANDA DEFASSA (*Kobus defassa ugandæ*).

patch, not extending above level of root of tail; ears usually shorter than in that species; general colour ranging from bright rufous to smoky or blackish grizzled; markings, with the exception of the rump-patch, and colour-pattern of the same general type as in *K. ellipsiprymnus*. Horn-dimensions are given under the headings of the races. Distribution approximately co-extensive with that of the genus.

The species is represented in the collection by at least

five well-defined races, which may be briefly defined as follows:—

A. Ears relatively long and pointed; a large white area (in addition to eye-streak) round eye.
 a. Size smaller; general colour rufous brown... *K. d. defassa.*
 b. Size larger; general colour bright rufous, especially on forehead *K. d. ugandæ.*

B. Ears shorter and rounded; no large white area round eye.
 a. General colour rufous *K. d. unctuosus.*
 b. General colour smoky.
 a'. Back lighter *K. d. crawshayi.*
 b'. Back darker *K. d. penricei.*

In addition to the above, and apart from certain so-called races which do not seem to be separable from *C. d. penricei*, the following names—many of which are probably based on individual herds rather than on races—have been applied to local forms of the defassa:—

a. KOBUS HARNIERI.

Kobus sing-sing, *Murie*, *Proc. Zool. Soc.* 1863, p. 3, pl. ii.

Antilope harnieri, *Murie* (ex *Kaup*), *op. cit.* p. 5, 1863.

Cobus harnieri, *Pousargues*, *Ann. Sci. Nat.*, *Zool.* ser. 7, vol. iv, p. 76, 1897.

Kobus harnieri, *O. Neumann*, *Sitzber. Ges. nat. Freunde*, 1905, p. 92; *Matschie*, *ibid.* 1910, p. 409.

Cobus defassa harnieri, *Lydekker*, *Game Animals of Africa*, p. 200, 1908.

Kobus defassa harnieri, *Roosevelt*, *African Game Trails*, p. 487, 1910.

Typical locality White Nile.

Type in Darmstadt Museum.

Described as having the coat shorter and less shaggy than that of *unctuosus*, and of an umber tint, quite unlike the russet or yellowish brown of that of *ugandæ*.

b. Kobus unctuosus matschiei, *O. Neumann*, *Sitzber. Ges. nat. Freunde*, 1905, p. 92; *Matschie*, *ibid.* 1910, p. 409.

Cobus defassa matschiei, *Lydekker*, *Game Animals of Africa*, p. 200, 1908.

Typical locality mouth of the Galana River, Lake Abaya.

Type in collection of Dr. O. Neumann.

General colour rufous, passing into iron-grey on crown of head and sides of body; white eye-streak sharper and longer, and white chin-band wider than in *harnieri*.

c. Kobus adolfi-friderici, *Matschie, Weidwerk in Wort u. Bild*, vol. xv, p. 234, 1906, *Sitzber. Ges. nat. Freunde*, 1910, p. 409.
Cobus ellipsiprymnus adolfi-frederici, *Lydekker, Game Animals of Africa*, p. 196, 1908.

Typical locality upper Orangi, south of Ikoma, German East Africa.

Type apparently in Berlin Zoological Museum.

Described from a head characterised by the dark colour of the nose, the absence of a white band on the throat, and the relatively short horn-tips.

d. Cobus defassa tjæderi, *Lönnberg, Arkiv Zool.* vol. iv, no. 3, p. 7, 1907; *Lydekker, Game Animals of Africa*, p. 202, 1908.
Kobus defassa tjæderi, *Matschie, Sitzber. Ges. nat. Freunde*, 1910, pp. 409 and 414.

Typical locality junction of the Guaso-hanek and Guaso-nyiro, north-western Laikipia, British East Africa.

Type in Royal Swedish Museum of Natural History, Stockholm.

Darker than the typical *defassa*, with a greater extension of the dark areas. Black of face extending from above white ring over muzzle to over middle of white eye-streak, and on to side of angle of mouth, thus covering a larger area than in typical *defassa;* eye-streak well-defined, but not extending further backwards than anterior third of eye; above the black face the forehead bright rufous mixed with black; sides of face behind black area like forehead except for a paler buffish brown patch between eye and root of ear; backs of ears rufous bordered with white, tips black; neck rufous above but greyish brown on sides; body-colour dark brown, with a rufous tinge, much darker than the rufous brown of typical *defassa;* under-parts dark smoky brown; legs and feet black with a brownish shade in front and a narrow white hoof-band; tail like back at root, but nearly black at tip. Horns apparently shorter, stouter and less curved than in typical *defassa*.

e. Kobus unctuosus tschadensis, *Schwarz, Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 267, 1913.
Kobus defassa tschadensis, *Schwarz, op. cit.* p. 495, 1913.

Typical locality Mafaling, Shari Valley, north-west Africa.

Type in Senckenberg Museum.

Chiefly distinguished from typical *defassa* by the narrower skull and the paler tint of fore part of back, the fawn of which contrasts markedly with the ochery tinge of the thighs and flanks; forehead tawny; middle of face brownish black, paler posteriorly; cheeks fawn.

f. Kobus defassa annectens, *Schwarz*, *Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 494, 1913.

Typical locality Badingua, Upper Shari Valley.

Described as intermediate between the preceding and the following form, being much darker than in *tschadensis*, with a shorter mane. Anterior portion of back, withers, and upper part of shoulders brownish red, strongly suffused with black and less contrasted with the colour of the neck than in *tschadensis;* neck similar, but with less black suffusion, owing to the shorter blackish tips of hairs; crown and forehead brownish red; middle portion of face similar, but some hairs with black tips, notably near muzzle; cheeks greyish red; backs of ears reddish brown in basal two-thirds, apical third black, whereas in *tschadensis* only the extreme tip and in *schubotzi* the terminal fourth is blackish; white of buttocks sharply contrasted with brownish red area bordering dark of rump; hind-legs from hocks, fore-legs from below shoulders, and tail-tip brownish black; light bands round lateral hoofs dirty white, those round hoofs brownish; underparts sooty brown, except inguinal region, which is white.

g. Kobus defassa schubotzi, *Schwarz*, *Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 495, 1913.

Typical locality Duma, near Libenge, Ubangui (Ubangi) Valley, north-west Africa.

Type in Senckenberg Museum.

Allied to *annectens*, but distinguished by its shorter coat, more brownish colour, blackish face, and more slender horns. The describer observes that "the pale *K. d. tschadensis*, with its long fur and indistinct markings, and the dark *K. d. schubotzi*, with its bright markings and short coat, seem at first to represent different species rather than local forms of the same species, but the two are connected by *K. d. annectens*, which combines the long fur of *K. d. tschadensis* with the dark colour of the present form."

*** For the characteristics of the following forms, the types of which, unless otherwise stated, are in the collection of Major Powell-Cotton at Quex Park, Birchington, Kent, reference must be made to the original descriptions. The colour of the forehead, the extent of the dark nose-patch, the length of the white eye-stripe, and the degree of extension of the whitish throat-patch towards the roots of the ears form some of the chief colour-differences.

h. Kobus defassa hawashensis, *Matschie*, *Sitzber. Ges. nat. Freunde*, 1910, p. 413.

Typical locality Hawash Valley, Abyssinia.

i. Kobus defassa powelli, *Matschie*, *op. cit.* p. 415, 1910.

Typical locality Laikipia Plateau, British East Africa.

j. Kobus defassa angusticeps, *Matschie*, *op. cit.* p. 416, 1910.

Typical locality Laikipia Plateau.

k. Kobus defassa nzoiæ, *Matschie*, *op. cit.* p. 417, 1910.

Typical locality Guasin-gishu Plateau, British East Africa.

l. Kobus defassa raineyi, *Heller*, *Smithson. Misc. Collect.* vol. lxi, No. 13, p. 5, 1913.

Typical locality Amala Valley, British East Africa.

Type in U. S. National Museum.

A large form distinguished from *tjæderi* by the redder general colour and smaller blackish nose-patch, which stops short of line of eyes. Distinguished from *nzoiæ* by superior size, narrower skull, and absence of rufous on nape of neck.

m. Kobus defassa fulvifrons, *Matschie*, *op. cit.* p. 418, 1910.

Typical locality eastward of Kitosh, between the Nzoia and Guaso-masa, British East Africa.

n. Kobus defassa avellanifrons, *Matschie*, *op. cit.* p. 419, 1910.

Typical locality near Kasindi, in the neighbourhood of the mouth of the Semliki, Albert-Edward Nyanza.

o. Kobus defassa cottoni, *Matschie, op. cit.* p. 420, 1910.

Typical locality Kasindi.

p. Kobus defassa dianæ, *Matschie, op. cit.* p. 421, 1910.

Typical locality Labelier, or Lobelia, about ten miles from Kasindi.

q. Kobus defassa breviceps, *Matschie, op. cit.* p. 424, 1910.

Typical locality Pembé, on the Nile between Dufilé and Matete.

r. Kobus defassa albertensis, *Matschie, op. cit.* p. 426, 1910; no description.

Typical locality Albert Nyanza.

s. Kobus defassa ladoensis, *Matschie, op. cit.* p. 426, 1910.

Typical locality between Dufilé and Lado.

t. Kobus defassa griseotinctus, *Matschie, op. cit.* p. 427, 1910.

Typical locality Kerri, near Kero, north of Lado.

u. Kobus unctuosa uwendensis, *Matschie, Mitt. Zool. Mus. Berlin*, vol. v, p. 570, 1911.

Typical locality near Isawa, eastern shore of Tanganyika. Type in Berlin Museum.

A.—Kobus defassa defassa.

Cobus defassa typicus, *Jackson, Great and Small Game of Africa*, p. 282, 1899; *Lydekker, Game Animals of Africa*, p. 200, 1908.

Cobus unctuosus defassa, *Schwarz, Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 267, 1913, *errorim* (*op. cit.* p. 495, note).

DEFASSA.

Typical locality near Lake Tana, Abyssinia.

General colour rufous brown, with the bases of the hairs greyish white; under-parts and inner sides of limbs white; forehead chestnut-red, sides of face and eye-streak white; ears relatively long (about 8 inches) and pointed, rufous at

back; feet blackish brown, passing into black towards hoofs; tail (about 12 inches long, exclusive of tuft) coloured like back above; hairs on neck long and harsh. Fine horns measure from about 29½ to 33 inches in length, with a girth of from 8 to 9½ and a tip-to-tip interval of from 15½ to about 21 inches.

The range of this race is generally considered to extend from western Abyssinia, through Sennar, Kordofan, and the Nile Valley, to the Bhar-el-Ghazal and Lado, and British and German East Africa, but if some at least of the above-mentioned forms are admitted to rank as races, it will have to be more or less curtailed.

76. 9. 26. 1. Skin, mounted, and skull. Atbara Valley, Abyssinia. *Purchased (Gerrard)*, 1876.

76. 9. 26. 2. Skin, mounted, and skull, female. Same locality. *Same history.*

76. 9. 26. 3. Skeleton. Same locality. *Same history.*

74. 11. 2. 6. Skull, with horns, and skin. Roan Valley, north-west Abyssinia. *Purchased*, 1874.

6. 11. 1. 59. Skull, with horns, and skin. Lake Zuay (Zwai), Gallaland; collected by Mr. P. Zaphiro. May belong to *hawashensis*. *Presented by W. N. McMillan, Esq.*, 1906.

9. 2. 10. 1. Head, mounted. Sudan.
Presented by K. C. B. Struvè, Esq., 1909.

5. 9. 21. 6–7. Two skulls, with horns. Near Roseires, Sennar, Blue Nile. *Presented by Capt. E. de H. Smith*, 1905.

2. 9. 4. 1. Skin, mounted. Southern Somaliland.
Presented by A. L. Butler, Esq., 1902.

0. 8. 6. 14. Skull and skin, female. White Nile. This and the next two specimens should represent *harnieri*.
Presented by Capt. S. S. Flower, 1900.

0. 8. 6. 15. Immature skin. Same locality.
Same history.

0. 8. 6. 12–13. Two skins. Bahr-el-Jeref, Upper Nile.
Same history.

12. 11. 13. 12. Skull, with horns. Dinder Valley, Sudan; collected by Capt. M. E. T. Gunthorpe.
Presented by Col. J. E. Gunthorpe, 1912.

98. 7. 2. 8–10. Skull, with horns, head-skin, and body-skin. Lake Rudolf. This and the next three specimens

may belong to *fulvifrons*, which is stated by its describer probably to occur in the neighbourhood of Lake Rudolf.

Presented by H. Andrew, Esq., 1898.

4. 7. 2. 10–11. Two heads, mounted, and the associated body-skins. Probably from the same district.

Bequeathed by H. Andrew, Esq., 1904.

97. 11. 21. 2. Head, mounted. East Africa.

Presented by J. Rowland Ward, Esq., 1897.

12. 9. 18. 1. Skull, with horns, and skin, immature. German East Africa, may be referable to *adolfi-friderici* of Matschie. *Presented by Capt. W. Silver*, 1912.

94. 1. 2. 3. Skin. Njiemps, Lake Baringo, British East Africa. This and the next specimen may be referable to *angusticeps*, which occurs near Lake Baringo.

Presented by Dr. J. W. Gregory, 1894.

1. 8. 9. 70. Skull and head-skin, female. Lake Baringo.

Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1901.

1. 8. 9. 69. Skull, with horns, and skin, immature. Ravine Station, British East Africa. Referable, doubtless, to one of the forms from this district described by Matschie.

Same history.

9. 7. 8. 6. Skin. Sobat Valley, southern Sudan.

Presented by C. C. Tower, Esq., 1909.

59. 9. 23. 4. Skull, with horns. Bahr-el-Ghazal. This, and perhaps the preceding specimen, may represent Matschie's *ladoensis* or *griseotinctus*.

Presented by Consul J. Petherick, 1859.

3. 6. 7. 1. Skin, mounted, albino female. Zambesia. This specimen appears to be a true albino, with red eyes.

Presented by R. H. Storey, Esq., 1903.

B.—Kobus defassa ugandæ.

Kobus unctuosus ugandæ, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1905, p. 92; *Matschie*, ibid. 1910, p. 409.

Cobus defassa ugandæ, *Lydekker, Game Animals of Africa*, p. 200, 1908; *Roosevelt, African Game Trails*, p. 487, 1910.

Kobus defassa ugandæ, *Hollister, Smithson. Misc. Collect.* vol. lvi, no. 2, p. 5, 1910.

Typical locality Maianda Valley, northern Uganda.

Type in collection of Dr. O. Neumann.

Described as being lighter-coloured than *harnieri*,* with the forehead bright rufous and more sharply contrasting with the body-colour than in either *harnieri* or *matschiei*.* Size large. Horns more uniformly curved and longer than in *d. defassa*, and thus closely approximating to those of *K. ellipsiprymnus*. Fine horns measure from 31 to 36¾ inches in length, with a girth of from 8¼ to 10½, and a tip-to-tip interval of from 18¾ to 36 inches.

The Semliki and Nyanza forms to which separate names have been given by Matschie † are here regarded as inseparable from this race,

63. 7. 7. 1. Head, mounted, Uganda. Noticed by Murie. *Proc. Zool. Soc.*, 1863, p. 3.

Presented by Capt. J. H. Speke, 1863.

1. 8. 9. 124–5. Two skulls with horns. Toru, Uganda. In the larger specimen (fig. 27) the length of the horns is 34⅛ inches.

Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1901.

5. 4. 3. 19–20. Two skins. South-western Ankoli, Uganda; collected by Mr. W. G. Doggett.

Presented by Lieut.-Col. C. Delmé-Radcliffe, 1905.

5. 4. 3. 21. Skeleton. Same locality and collector.

Same history.

12. 12. 16. 1. Skull, with horns. Ankoli.

Presented by Sir F. J. Jackson, K.C.M.G., C.B., 1912.

C.—Kobus defassa unctuosus.

Cervus sing-sing, *Bennett, Rep. Council Zool. Soc.* 1832, p. 5, nomen nudum.

Antilope koba, *Ogilby, Penny Cyclopædia*, vol. i, p. 79, 1834, *Proc. Zool. Soc.* 1836, p. 103, *nec* Erxleben.

Antilope sing-sing, *Waterhouse, Cat. Mamm. Mus. Zool. Soc.* p. 41, 1838, nomen nudum.

Antilope unctuosa, *Laurillard, Dict. Univ. Hist. Nat.* vol. i, p. 622, 1841; *Wagner, Schreber's Säugthiere, Suppl.* vol. iv, p. 434, 1844.

Kolus sing-sing, *Gray, List Mamm. Brit. Mus.* p. 159, 1843.

Kobus sing-sing, *Gray, Ann. Mag. Nat. Hist.* ser. 1, vol. xviii, p. 232, 1846, *Knowsley Menagerie*, p. 15, 1850, *Proc. Zool. Soc.* 1850, p. 131, *Cat. Ungulata Brit. Mus.* p. 99, 1852, *Cat. Ruminants*

* *Supra*, p. 234. † *Ibid.* p. 237.

Brit. Mus. p. 15, 1872, *Hand-List Ruminants Brit. Mus.* p. 87, 1873; *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 262, 1862.

Antilope defassa, *var.* senegalensis, *Wagner, Schreber's Säugthiere, Suppl.* vol. v, p. 435, 1855.

Adenota sing-sing, *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 174, 1869.

Cobus sing-sing, *Sclater, List Anim. Zool. Gardens*, p. 144, 1883.

Cobus unctuosus, *Sclater, Proc. Zool. Soc.* 1893, p. 726; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 105, pl. xxxiii, 1896; *Rothschild, Powell-Cotton's Sporting Trip through Abyssinia*, p. 466, 1902.

Cobus defassa unctuosus, *Arnold, Great and Small Game of Africa*, p. 276, 1899; *Ward, Records of Big Game*, ed. 6, p. 197, 1910.

Cobus onctuosus, *Trouessart, Cat. Mamm.* vol. ii, p. 929, 1898, (?) errorim.

Kobus defassa unctuosus, *Pocock, Proc. Zool. Soc.* 1904, vol. i, p. 4 (hybrid).

Cobus defassa sing-sing, *Lydekker, Game Animals of Africa*, p. 201, 1908.

Kobus unctuosus, *O. Neumann, Sitzber. Ges. nat. Freunde*, 1905, p. 92.

Kobus unctuosa, *Matschie, Sitzber. Ges. nat. Freunde*, 1910, p. 409.

SING-SING.

Typical locality Senegal.

General colour sandy brown, with the bases of the hairs whitish; flanks browner, and contrasting strongly with white rump-patch; backs of ears, including margins, blackish, inner surfaces filled with long white hairs; hairs of neck long, thin, and somewhat paler than back; front of face rather darker brown than back; feet blackish, with narrow white hoof-bands; tail thin, brown above, like back, with a black tip, length about 14 inches. Fine horns measure from 27 to 31½ inches in length, with a girth of 7½ to 10¼, and a tip-to-tip interval of from 12 to 23 inches.

The distributional area is taken to include Senegal, Gambia, Nigeria, the Shari Valley, Sierra Leone, and other parts of West Africa. The Shari Valley sing-sing has, however, been separated as *tschadensis*, and other named forms in the list on pages 234–238 are also based on modifications of the sing-sing.

61. 2. 10. 3. Skin, mounted. Gambia; collected by Mr. J. Whitfield. *Presented by the Earl of Derby*, 1861.

46. 11. 20. 12. Skull, female. Same locality and collector. *Same donor*, 1846.

46. 10. 17. 2. Skeleton, immature. Same locality and collector. *Same history.*

46. 10. 17. 3. Skin, mounted, young. Same locality and collector. *Same history.*

46. 10. 17. 4. Skull, with horns, immature. Same locality and collector. *Same history.*

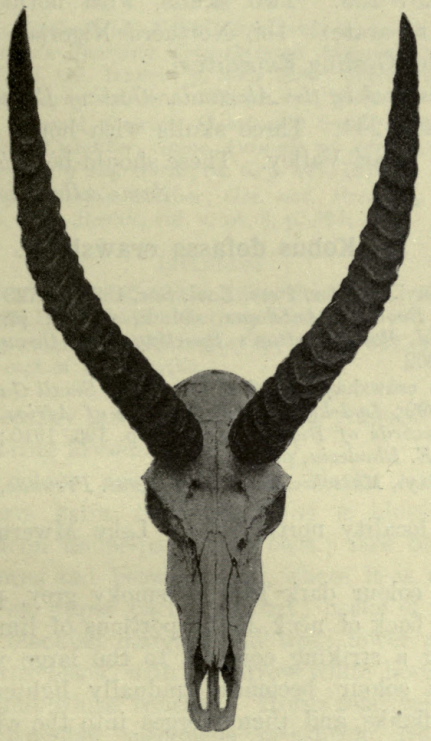


FIG. 28.—SKULL AND HORNS OF SHARI DEFASSA (*Cobus defassa unctuosus* (?)).

57. 2. 24. 4. Skin. West Africa.
Purchased (*Zoological Society*), 1857.

57. 2. 24. 5. Skeleton, female. West Africa.
Same history.

5. 12. 10. 4. Skull, female. Lagos.
Presented by W. A. Ross, Esq., 1905.

4. 8. 2. 91. Skin, female. Sierra Leone.
Presented by J. Rowland Ward, Esq., 1904.

5. 5. 10. 5. Skull, with horns, and skin. Wasé, Northern Nigeria. *Presented by Dr. H. K. W. Kumm*, 1905.

5. 5. 10. 6. Skull, with horns, and skin. Same locality. *Same history.*

1. 2. 25. 1. Skin. Niger Valley; collected by Major J. A. Bindon. *Presented by J. Rowland Ward, Esq.*, 1901.

7. 7. 8. 237–238. Two skulls, with horns, and skins (head-skins separate). Ibi, Northern Nigeria; collected by the Alexander-Gosling Expedition.

Presented by the Alexander-Gosling Expedition, 1907.

7. 7. 8. 239–241. Three skulls with horns (fig. 27) and head-skins. Shari Valley. These should be *tschadensis.*

Same collection and history.

D.—Kobus defassa crawshayi.

Cobus crawshayi, *Sclater*, *Proc. Zool. Soc.* 1893, p. 723; *Sclater and Thomas*, *Book of Antelopes*, vol. ii, p. 109, pl. xxxiv, 1896; *Rothschild*, *Powell-Cotton's Sporting Trip through Abyssinia*, p. 466, 1902.

Cobus defassa crawshayi, *Bryden*, *Great and Small Game of Africa*, p. 280, 1899; *Lydekker*, *Game Animals of Africa*, p. 201, 1908; *Ward*, *Records of Big Game*, ed. 6, p. 196, 1910; *Letcher*, *Big Game N.E. Rhodesia*, p. 206, 1911.

Kobus crawshayi, *Matschie*, *Sitzber. Ges. nat. Freunde*, 1910, p. 409.

Typical locality north side of Lake Mweru, north-east Rhodesia.

General colour dark iron or smoky grey, passing into blackish on back of neck, lower portions of limbs, and tail, and forming a striking contrast to the large white rump-patch; this colour becomes gradually lighter and more greyish on flanks, and then merges into the whitish of the under-parts. Fine horns measure from 27 to 31½ inches in length, with a girth of from 7⅛ to 10¼, and a tip-to-tip interval ranging from 12 to 23 inches.

93. 7. 25. 4. Skull, with horns, and skin. North shore of Lake Mweru; collected by R. Crawshay, Esq. Type.

Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1893.

93. 7. 25. 4. Skin and skull with horns. Same locality and collector. *Same history.*

93. 7. 25. 5. Skin. Same locality and collector. *Same history.*

94. 3. 8. 11. Skin. Same locality.
Presented by Sir Alfred Sharpe, K.C.M.G., C.B., 1894.

8. 2. 14. 11. Skull, with horns. South Angoniland.
Presented by C. B. C. Storey, Esq., 1908.

E.—Kobus defassa penricei.

Cobus penricei, *Rothschild, Novit. Zool.* vol. ii, p. 32, pl. iv, 1895, *Powell-Cotton's Sporting Trip through Abyssinia*, p. 466, 1902; *Bryden, Field*, vol. lxxxvii, p. 653, 1896; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 113, pl. xxv, 1896.

Cobus defassa penricei, *Penrice, Great and Small Game of Africa*, p. 281, 1899; *Lydekker, Game Animals of Africa*, p. 201, 1908; *Ward, Records of Big Game*, ed. 6, p. 197, 1910.

Kobus penricei, *Matschie, Sitzber. Ges. nat. Freunde*, 1910, p. 409, *Mitt. Zool. Mus. Berlin*, vol. v, pt. 3, p. 564, 1911.

INCLUDING

Kobus penricei frommi, *Matschie, Mitt. Zool. Mus. Berlin*, vol. v, pt. 3, p. 563, 1911, western German E. Africa.

Kobus penricei muenzneri, *Matschie, op. cit.* p. 567, 1911, German E. Africa, east of Tankanyika.

Typical locality interior of Benguela, Angola.

Type in Tring Museum.

General colour deep brownish black, mingled with reddish brown hairs, thus producing a blue-roan effect, most marked on under-parts and back; face black, except at base of horns and between ears, where it is chestnut; a white patch on upper part of throat; backs of ears rufous brown, with blackish margins and tips; lower part of legs nearly uniform black, with a narrow white hoof-band; tail black above and white beneath. Horns relatively short and stout; fine Angolan specimens measuring from 24½ to 29 inches in length, with a girth of from 8 to 8¾, and a tip-to-tip interval of from 9½ to 20 inches.

If the above-mentioned forms named by Matschie are really nearly related to the typical *penricei*, the range of the race (or of nearly allied races) will include western German East Africa.

0. 10. 13. 1. Skull, with horns, and skin. Balomba Valley, Angola. *Presented by G. W. Penrice, Esq.*, 1900.

0. 10. 14. 1. Skull and skin, female. Same locality; collected by G. W. Penrice, Esq. *Purchased (Gerrard)*, 1900.

2. Subgenus **ONOTRAGUS.**

Onotragus, *Gray, Cat. Ruminants Brit. Mus.* p. 17, 1872.

Size intermediate between typical *Kobus* and *Adenota;* coat long and rough, not grizzled; hair of back normal or reversed; neck not heavily maned; horns comparatively long and slender, sublyrate, with a more or less marked double (sigmoid) flexure; a single pair of inguinal pouches.

Distribution east southern and central eastern Africa.

The members of this group—whether regarded as distinct species, or, as they may ultimately prove to be, local races of the lechwe—appear to present an analogy in the matter of coloration to the local forms of the typical species of the subgenus *Adenota;* rufous and foxy coloured forms inhabiting the more open districts, while in the hot, moist region of the swamps of the Sobat the colour changes to black. The transition from the typical rufous lechwe, through Smithe-man's lechwe, to the black Sobat form is, however, so far as present information goes, less nearly complete—both in the matter of colour and horn-shape—than in the members of the kob group, and the various local forms are, therefore, accorded, at least provisionally, specific rank.

The four representatives of the group—of which the second is provisionally recognised—may be distinguished as follows:—

A. No white patch in front of withers.
 a. Hair of back not reversed; general colour wholly or mainly fulvous.
 a^1. General colour wholly fulvous *K. leche.*
 b^1. Some black on bases of shoulders and neck *K. robertsi.*
 b. Hair of back reversed; general colour of back, shoulders, thighs and face more or less blackish brown *K. smithemani.*
B. A large white patch in front of withers..... *K. maria.*

III. KOBUS (ONOTRAGUS) LECHE.

Kobus leche, *Gray, Knowsley Menagerie*, p. 23, 1850; *Turner, Proc. Zool. Soc.* 1850, p. 174.

Adenota leche, *Gray, Proc. Zool. Soc.* 1850, p. 130, *Ann. Mag. Nat. Hist.* ser. 2, vol. viii, p. 212, 1851; *Huet, Bull. Soc. Acclim.*

ser. 4, vol. iv, p. 77, 1887; *Pousargues*, *Ann. Sci. Nat.*, *Zool.* ser. 7, vol. iv, p. 71, 1897.

Adenota lechee, *Gray*, *Cat. Ungulata Brit. Mus.* p. 97, 1852; *Gerrard*, *Cat. Bones Mamm. Brit. Mus.* p. 237, 1862.

Heleotragus leche, *Kirk*, *Proc. Zool. Soc.* 1864, p. 658.

Onotragus lechee, *Gray*, *Cat. Ruminants Brit. Mus.* p. 17, 1872, *Hand-List Ruminants Brit. Mus.* p. 88, 1873.

Cobus leechi, *Buckley*, *Proc. Zool. Soc.* 1876, p. 201.

Cobus lechee, *Selous*, *Proc. Zool. Soc.* 1881, p. 760, *A Hunter's Wanderings in S. Africa*, p. 220, 1881; *Ward*, *Records of Big Game*, p. 90, 1892; *Sclater*, *Proc. Zool. Soc.* 1893, p. 728; *Sclater and Thomas*, *Book of Antelopes*, vol. ii, p. 149, pl. xlii, 1896; *Rothschild*, *Powell-Cotton's Sporting Trip through Abyssinia*, p. 466, 1902.

Kobus lechee, *Nicholls and Eglington*, *Sportsman in South Africa*, p. 42, 1892.

Cobus leche, *Lydekker*, *Horns and Hoofs*, p. 225, 1893, *Great and Small Game of Africa*, p. 269, 1899, *Game Animals of Africa*, p. 218, 1908; *W. L. Sclater*, *Fauna S. Africa*, *Mamm.* vol. i, p. 189, 1900; *Ward*, *Records of Big Game*, ed. 6, p. 207, 1910.

Cobus lechi, *Selous*, *Great and Small Game of Africa*, p. 299, 1899.

Cobus lechwe, *Rothschild*, *Proc. Zool. Soc.* 1907, p. 237.

Lechwe, Leche, or Lichi.

Type of *Onotragus*.

Typical locality Zonga Valley, near Lake Ngami.

Size intermediate between that of the waterbuck and that of the kob, the shoulder-height being about 40 or 41 inches. Hair coarse, rather long, and rough, that of middle of back directed backwards; hind surface of pasterns bare. General colour light fulvous; under-parts, from chin downwards and backwards, white; area above shoulders, nape of neck, and region round eyes coloured like back; fronts of whole of fore-legs and those of hind-legs from the hocks downwards, with the exception of a broad white band above hoofs, black; tail slender, with a black terminal tuft, just reaching level of hocks. Horns long, moderately slender, sublyrate in form, with an imperfect double, or sigmoid, curve; fine specimens measure from 29 to 33½ inches in length, with a girth of from 7¾ to 9¼, and a tip-to-tip interval of from 18 (in one instance 15) to 27 inches.

The distributional area extends from Zambesia to Barotsiland (North-west Rhodesia) and Nyasaland, and westwards to Angola.

50. 7. 4. 2. Skin, mounted. Zonga Valley. Type.
Presented by Capt. F. Vardon, 1850.

81. 4. 20. 1. Skin, mounted. Chobi Valley; collected by F. C. Selous, Esq. Head figured in *The Book of Antelopes*, vol. ii, p. 151. *Purchased*, 1881.



Fig. 29.—Head of the Lechwe (*Kobus* [*Onotragus*] *leche*).

81. 7. 27. 2. Skull, with horns. Linyanti, Chobi Valley; same collector. *Same history.*

0. 11. 25. 1. Head, mounted (fig. 29). Barotsiland, North-eastern Rhodesia.
Presented by J. Rowland Ward, Esq., 1900.

99. 3. 21. 1–2. Two skulls, with horns, and skins. Barotsiland. *Presented by R. T. Coryndon, Esq.*, 1899.

94. 3. 8. 9. Skull, with horns, and skin. Nyasaland; collected by Sir Alfred Sharpe, K.C.M.G.
Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1894.

94. 3. 8. 9. Frontlet and horns. Same locality and collector. *Same history.*

0. 8. 17. 1. Skull, with horns, and female head-skin. Angola. *Presented by G. W. Penrice, Esq.*, 1900.

IV. KOBUS (ONOTRAGUS) ROBERTSI.

Cobus robertsi, *Rothschild*, *Proc. Zool. Soc.* 1907, p. 237; *Lydekker*, *Game Animals of Africa*, *Suppl.* p. 12, 1911.

Typical locality district between Lakes Mweru and Bangweolo, Northern Rhodesia.

Type in Tring Museum.

Stated to differ from typical lechwe by the presence of black patches on sides of lower part of neck and fore portion of shoulders, as well as by admixture of black hairs on cheeks and sides of throat and neck. The horns are smaller and less massive, with broader and more approximated ridges.

As this lechwe occurs in company with the true lechwe, it must be regarded—if anything more than a melanistic phase—as a species rather than a race.

13. 11. 26. 1. Body-skin. Luena Valley, tributary of the Kalungwisi, N.E. Rhodesia.

Presented by G. Blaine, Esq., 1913.

13. 11. 27. 2. Skull, with horns, and skin. Loango Valley, N.E. Rhodesia.

Presented by O. E. Wynne, Esq., 1913.

V. KOBUS (ONOTRAGUS) SMITHEMANI.

Cobus smithemani, *Lydekker*, *Proc. Zool. Soc.* 1899, p. 982, pl. lxxi, *Game Animals of Africa*, p. 222, 1908; *Rothschild*, *Powell-Cotton's Sporting Trip through Abyssinia*, p. 466, 1902; *Letcher*, *Big Game N.E. Rhodesia*, p. 189, 1911.

Cobus smithemanni, *Rothschild*, *Proc. Zool. Soc.* 1907, p. 237.

Typical locality borders of Lake Mweru, Barotsiland, Northern Rhodesia.

Nearly related to *K. leche*, but with the hair of back reversed, and head, upper-parts, and fronts of limbs more or less completely blackish brown in adult bucks; elsewhere

rufous; horns somewhat intermediate in character between those of *leche* and *maria*, showing a more decided sigmoid flexure than in the former. Good horns measure from 20 to 24¼ inches in length, with a girth of from 5⅞ to 7, and a tip-to-tip interval of from 11¼ to 18¾ inches.

Kobus robertsi is stated to occur in the same area as the typical *smithemani*, and according to Rothschild, *leche* is likewise found in the same district, but this is denied by Letcher, who mentions that while black lechwes swarm in the swamps round Lake Tumbwa, North-east Rhodesia, he never observed a single example of the true lechwe. Black lechwes, he observes, appear to be restricted "to the immense marshes which surround Lakes Bangweolo and Mweru and Tumbwa in North-eastern Rhodesia, and in some parts of the Lukanga Swamp in North-western Rhodesia." A specimen entered below indicates, however, the extension of the range into Congo territory.

99. 2. 22. 1. Skin. Near Lake Mweru. Type.
Presented by T. Smitheman, Esq., 1899.

3. 11. 17. 2. Skin, mounted. Lake Mweru.
Presented by the Hon. Walter Rothschild, 1903.

4. 2. 15. 2. Skull, with horns, and skin. Lake Bangweolo. *Same donor*, 1904.

2. 7. 21. 1. Head, female, mounted. Lake Mweru.
Presented by R. T. Coryndon, Esq., 1902.

12. 3. 16. 1. Skull, with horns, and head-skin. Kashedi, Chambesi Valley, east of Lake Bangweolo.
Presented by the Hon. W. Guinness, 1912.

7. 11. 28. 1. Skin. Lualaba Valley, Congo.
Presented by J. Rowland Ward, Esq., 1907.

12. 12. 21. 1. Skull, with horns, and skin. Mukamba Valley, North-east Rhodesia.
Presented by O. E. Wynne, Esq., 1912.

7. 11. 15. 1–2. Two skulls, with horns, and head-skins. Chambesi Valley, Chinsola district.
Presented by R. L. Henges, Esq., 1907.

7. 11. 15. 3. Skull, with horns, and skin, immature. Same locality. *Same history.*

7. 11. 15. 9. Flat skin. Same locality. *Same history.*

VI. KOBUS (ONOTRAGUS) MARIA.

Adenota megaceros, *Fitzinger* (ex *Heuglin*), *Sitzber. k. Ak. Wiss. Wien*, vol. xvii, p. 247, 1855, nomen nudum; *Heuglin*, *Nova Acta Ac. Cæs. Leop.-Car.* vol. xxx, pt. 2, p. 14, pl. ii, figs. 7, 8, 1863; *Marno*, *Reise Ægypt. Æquat. Prov.* p. 40, 1878.

Kobus maria, *Gray*, *Ann. Mag. Nat. Hist.* ser. 3, vol. iv, p. 296, 1859, *Cat. Ruminants Brit. Mus.* p. 16, 1872, *Hand-List Ruminants Brit. Mus.* p. 87, 1873; *Gerrard*, *Cat. Bones Mamm. Brit. Mus.* p. 239, 1862; *Petherick*, *Travels in Central Africa*, vol. i, p. 159, 1869.

Kobus megaceros, *Marno*, *Reise Geb. blauen u. weissen Nil*, p. 387, 1874.

Cobus mariæ, *Ward*, *Records of Big Game*, p. 91, 1892; *Bryden*, *Great and Small Game of Africa*, p. 287, 1899; *Thomas*, *Proc. Zool. Soc.* 1900, p. 34.

Cobus maria, *Lydekker*, *Horns and Hoofs*, p. 224, 1893, *Great and Small Game of Africa*, p. 269, 1899, *Game Animals of Africa*, p. 205, 1908; *Sclater and Thomas*, *Book of Antelopes*, vol. ii, p. 121, pl. xxxvii, 1896; *Rothschild*, *Powell-Cotton's Sporting Trip through Abyssinia*, p. 466, 1902; *Ward*, *Records of Big Game*, ed. 6, p. 198, 1910; *Goldschmidt-Rothschild*, *Ber. Senckenberg. Ges.* vol. xliii, p. 1, pl. i, 1912.

Kobus mariæ, *Pocock*, *Proc. Zool. Soc.* 1910, p. 916.

Onototragus megaceros, *Heller*, *Smithson. Misc. Collect.* vol. lxi, No. 7, p. 12, 1913.

Typical locality Awan, Bahr-el-Ghazal.

Size rather less than that of leche; shoulder-height about 38 inches. Hair of back reversed; general colour dark blackish brown in adult males; chin and a narrow band on upper lip, inner side of ears, a band on hind part of head, sometimes continued down nape, a large patch above the shoulders, middle of abdomen, inner sides of hind-legs, and a broad band above hoofs white; a spot in front of eyes, and space between eyes and ears whitish; tail relatively long and slender, reaching about to hocks, blackish brown above, inclusive of whole terminal tuft, and white below; hoofs relatively long; horns long and slender, heavily ridged nearly to tips, inclining at first backwards, diverging and curving forwards in the middle, and then bending backwards and inwards towards the tips, so as to form a distinctly double, or sigmoid, flexure. Good horns measure from 28 to 32 inches in length, with a girth of from $6\frac{1}{2}$ to $7\frac{3}{4}$, and a tip-to-tip interval of from 12 to $21\frac{1}{4}$ inches.

The distributional area includes the swamps of the White Nile and neighbouring rivers.

59. 9. 22. 8. Skull, with horns (fig. 30), originally mounted with head-skin. Awan, Bahr-el-Ghazal; collected

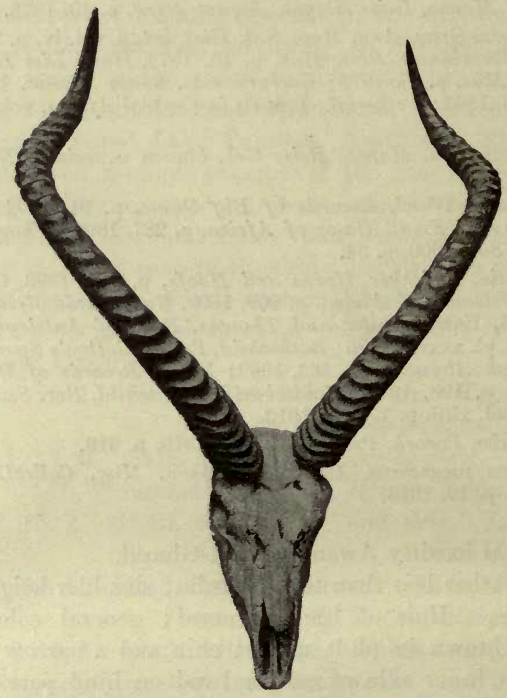


FIG. 30.—SKULL AND HORNS OF MRS. GRAY'S LECHWE (*Kobus* [*Onotragus*] *maria*).

by Consul J. Petherick. Type; figured in *The Book of Antelopes*, vol. ii, p. 123, from Gray's original illustration. *Purchased*, 1859.

59. 9. 22. 9. Skull, female. Rek, Bahr-el-Ghazal; same collector. Co-type. *Same history.*

0. 8. 7. 6. Skin, mounted. White Nile. *Presented by Major H. N. Dunn*, 1900.

0. 8. 6. 11. Skin. Lake No, Bahr-el-Ghazal. *Presented by Capt. S. S. Flower*, 1900.

3. Subgenus **ADENOTA.**

Adenota, *Gray*, *Proc. Zool. Soc.* 1850, p. 129; *Pocock*, *Proc. Zool. Soc.* 1910, p. 915.

Relatively small antelopes, with short or moderately long coat, not grizzled; hair of back reversed; neck not maned; horns relatively short, sublyrate, without well-marked double (sigmoid) flexure; a single pair of inguinal pouches.

Distribution Equatorial and Southern Africa.

The two species here recognised may be distinguished as follows:—

A. Front of fore-legs black; hair short..... *Kobus kob.*

B. Front of fore-legs rufous; hair longer..... *Kobus vardoni.*

VII. KOBUS (ADENOTA) KOB.

Antilope kob, *Erxleben*, *Syst. Regn. Anim.* p. 293, 1777; *Zimmermann*, *Geogr. Geschichte*, vol. ii, p. 124, 1780; *Gatterer*, *Brev. Zool.* vol. i, p. 84, 1780; *Cuvier*, *Dict. Sci. Nat.* vol. ii, p. 234, 1804; *Desmarest*, *Nouv. Dict. Hist. Nat.* vol. ii, p. 187, 1816, *Mammalogie*, vol. ii, p. 457, 1822; *Goldfuss*, *Schreber's Säugthiere*, vol. v, p. 1240, 1818; *Lesson*, *Man. Mamm.* p. 375, 1827; *J. B. Fischer*, *Synop. Mamm.* p. 463, 1829; *Owen*, *Proc. Zool. Soc.* 1836, p. 38, *Anat. Vertebrates*, vol. iii, p. 634, 1868; *Laurillard*, *Dict. Univ. Hist. Nat.* vol. i, p. 617, 1841; *Wagner*, *Schreber's Säugthiere*, *Suppl.* vol. iv, p. 435, 1844, vol. v, p. 432, 1855; *Fraser*, *Zool. Typ.* pl. xx, 1849; *Temminck*, *Esquiss. Zool. Guiné*, pp. 190 and 199, 1853.

Cerophorus (Gazella) kob, *Blainville*, *Bull. Soc. Philom.* 1816, p. 75.

Antilope forfex, *H. Smith*, *Griffith's Animal Kingdom*, vol. iv, p. 221, vol. v, p. 334, 1827; *Lesson*, *Hist. Nat. Anim.* vol. x, p. 209, 1836; *Reichenbach*, *Säugethiere*, vol. iii, p. 110, 1845.

Antilope adenota, *H. Smith*, *Griffith's Animal Kingdom*, vol. iv, p. 223, vol. v, p. 335, 1827; *A. Smith*, *S. African Quart. Journ.* vol. ii, p. 209, 1834; *Reichenbach*, *Säugethiere*, vol. iii, p. 110, 1845.

Kobus adansoni, *A. Smith*, *Illustr. Zool. S. Africa*, *Mamm.* text to pl. xxix, 1840.

Antilope annulipes, *Gray*, *Ann. Mag. Nat. Hist.* ser. 1, vol. x, p. 262, 1842.

Adenota kob, *Gray*, *Knowsley Menagerie*, p. 14, pls. xiv and xv, 1850, *Proc. Zool. Soc.* 1850, p. 129, *Ann. Mag. Nat. Hist.* ser. 2, vol. viii, p. 211, 1851, *Cat. Ungulata Brit. Mus.* p. 96, 1852, *Cat. Ruminants Brit. Mus.* p. 17, 1872, *Hand-List Ruminants Brit. Mus.* p. 87, 1873; *Gerrard*, *Cat. Bones Mamm. Brit. Mus.* p. 238, 1862; *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 174, 1869; *Jentink*, *Cat. Osteol. Leyden Mus.* (*Mus. Pays-Bas*, vol. ix) p. 130, 1887, *Cat. Mamm. Leyden Mus.* (*op. cit.*

vol. xi) p. 152, 1892; *Matschie*, *Mitt. deutsch. Schutzgebiete*, vol. vi, p. 17, 1893; *Pousargues*, *Ann. Sci. Nat.*, *Zool.* ser. 7, vol. iv, p. 58, 1897; *O. Neumann*, *Sitzber. Ges. nat. Freunde*, 1905, p. 91; *Pocock*, *Proc. Zool. Soc.* 1910, p. 915; *Heller*, *Smithson. Misc. Collect.* vol. lxi, no. 7, p. 11, 1913; *Rothschild*, *Ann. Mag. Nat. Hist.* ser. 8, vol. xii, p. 574, 1913.

Adenota buffoni, *Fitzinger*, *Sitzber. k. Ak. Wiss. Wien*, vol. li, pt. 1, p. 174, 1869.

Adenota annulipes, *Pousargues*, *Ann. Sci. Nat.*, *Zool.* ser. 7, vol. iv, pp. 53 and 73, 1897.

Cobus kob, *Lydekker*, *Field*, vol. lxxvii, p. 980, 1891, *Horns and Hoofs*, p. 224, 1893; *Sclater*, *Proc. Zool. Soc.* 1895, p. 638; *Ward*, *Records of Big Game*, ed. 2, p. 197, 1896; *Sclater and Thomas*, *Book of Antelopes*, vol. ii, p. 137, pl. xl, 1896; *Arnold*, *Great and Small Game of Africa*, p. 291, 1899; *Rothschild*, *Powell-Cotton's Sporting Trip through Abyssinia*, p. 469, 1902.

Adenota koba, *O. Neumann*, *Sitzber. Ges. nat. Freunde*, 1905, p. 91.

Cobus cob, *Lydekker*, *Proc. Zool. Soc.* 1899, p. 794, *Great and Small Game of Africa*, p. 269, 1899; *Alexander*, *From Niger to Nile*, vol. ii, p. 392, 1907.

Cobus coba, *Lydekker*, *Game Animals of Africa*, p. 210, 1908; *Ward*, *Records of Big Game*, ed. 6, p. 203, 1910.

KOB.

Type of *Adenota*.

Typical locality Upper Guinea.

A variable species, ranging in shoulder-height from about 34 to 36 inches, and in colour from rich orange fulvous, or foxy red, to dark blackish brown in adult bucks, with more or less white in the region of the eye; coat short and sleek, reversed on middle of back from loins to neck; front of fore-legs black, and frequently a white hoof-band; muzzle, lips, chest, under-parts, and inner sides of upper portions of limbs white.

The distribution embraces Equatorial Africa from Guinea to Uganda.

The existence of a more or less complete transition in the matter of colouring from the typical red *K. koba* to the dark blackish brown *K. k. leucotis* was pointed out in 1908 by the writer, who did not, however, then propose to class the latter and the intermediate types as local races of the former. Subsequent information has, however, convinced him that this is the proper course to adopt.

Evidence of such a gradation is afforded by the skulls and head-skins of two kobs from the Bahr-el-Ghazal,

probably referable to *K. k. nigroscapulatus*, which came under the writer's observation in 1911. One of these, obtained near the junction of the Bahr-el-Arab with the Bahr-el-Ghazal, was (as shown by the worn cheek-teeth) an older buck than the other; it had blackish markings on the sides of the neck, and the tips of the backs of the ears fawn, but the rest dirty white—quite different from the pure white of *leucotis*. The second and younger buck, killed on the Jur River (also in the northern portion of the Bahr-el-Ghazal), had no black on the neck, and the ears were foxy throughout. In both specimens, which were killed during August and September, the horns were stouter, shorter, and less curved than those of *leucotis*, and, therefore, more like those of *thomasi*. Both apparently belong to the same race, the differences in colour being due to difference in age, and they seem to indicate a race intermediate between the *leucotis* type on the one hand, and *thomasi* on the other.

Heller, *Smithson. Misc. Collect.* vol. lxi, no. 7, p. 12, accepts the view that all the Nile kobs are races of *Kobus kob*.

The following is a tentative key to the named races, some of which are only provisionally recognised as such:—

A. Backs of ears fulvous; white orbital area usually small.

a. Size relatively large.

a^{1}. Horns short, slender, and long-pointed; light patch above eye narrow, and that below eye pale buff *K. k. thomasi*.

b^{1}. Horns stouter, short-pointed, and puku-like; no white above eye *K. k. loderi* (including *pousarguesi*).

b. Size (typically) smaller.

a^{1}. General colour wholly fulvous.

a^{2}. Size smaller; a buffish white area above eye..... *K. k. kob*.

b^{2}. Size rather larger; flanks paler; skull narrower *K. k. adolfi*.

c^{2}. Size smaller; flanks darker..... *K. k. bar-keetœ*.

d^{2}. Horns larger and heavier, general colour paler, and white patch above eye pure, and extending below end of tear-duct *K. k. neumanni*.

b^1. Some dark colouring, at least occasionally, on body or neck.
a^1. Upper-parts in some cases dusky *K. k. nigricans.*
b^1. Hind-quarters black-speckled..... *K. k. ubangiensis.*

B. Backs of ears often partially white; white of orbital region larger; ears frequently wanting black tips.
a. Size small; white orbital area medium *K. k. alurœ.*
b. Size large; whole orbital region white *K. k. notatus.*

C. Backs of ears white; white of orbital region large.
a. General colour in dark phase blackish brown mingled with fulvous hairs ... *K. k. nigroscapulatus.*
b. General colour (in adult males) deep black *K. k. leucotis.*

In addition to the above, the name *Adenota mengesi* has been proposed by O. Neumann (*Sitzber. Ges. nat. Freunde*, 1900, p. 560), on the evidence of a horn of a light, slender gazelle-like type from southern Somaliland.

A.—Kobus kob kob.

Cobus coba typicus, *Ward, Records of Big Game*, ed. 6, p. 200, 1910.
Adenota kob kob, *Schwarz, Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 497, 1913.

Buffon's, or Western Kob.

Typical locality Upper Guinea.

Size relatively small, the shoulder-height being about 34 inches. General colour orange fulvous, with a whitish ring round each eye and another round base of each ear; the ears themselves being fulvous on the back, with indistinct black tips, and white internally; an indistinct blackish stripe down front of fore-legs from some distance above knees to hoofs, usually interrupted by a white band just above the latter; hind-legs similarly marked, but the black commencing about middle of shanks. Horns relatively small, good specimens measuring from 19 to 21¾ inches in length, with a girth of from 6 to 7⅜, and a tip-to-tip interval of from 5½ to 14½ inches.

The distributional area extends from Gambia to Nigeria.

The writer follows O. Neumann in considering *annulipes* (p. 254) as inseparable from the present race.

46. 11. 20. 9. Imperfect skull, very young female. Gambia; collected by Mr. J. Whitfield.

Presented by the Earl of Derby, 1846.

46. 11. 2. 21. Skull, with horns, immature and imperfect. Same locality and collector. *Same history.*

46. 11. 2. 10. Skin, immature female. Same locality and collector. *Same history.*

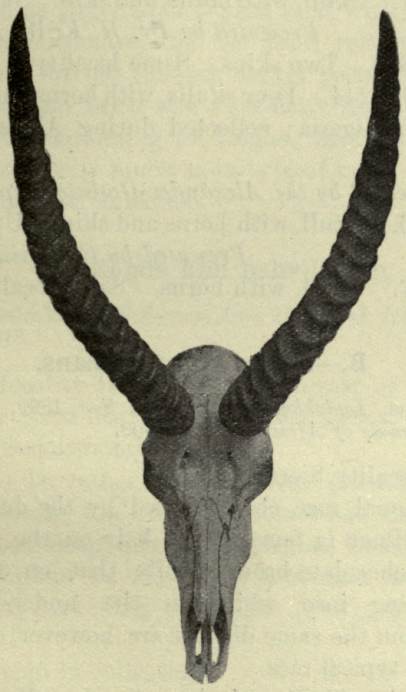


FIG. 31.—SKULL AND HORNS OF WESTERN KOB (*Kobus kob*).

46. 10. 17. 5. Skin, immature, mounted. Same locality and collector. *Same history.*

46. 10. 23. 15. Skin, immature female. Same locality and collector. *Same history.*

8. 5. 14. 1. Skull, with horns, and skin. Gambia.

Presented by W. B. Stanley, Esq., 1908.

64. 6. 15. 2. Head, immature, mounted. West Africa; collected by Mr. Dalton, probably in Gambia.

Purchased, 1864.

65. 5. 3. 11. Skull, with horns. West Africa, probably Gambia; same collector. *Purchased (Stevens)*, 1865.

95. 8. 25. 4. Skin. Lukoja, Northern Nigeria. *Presented by Lieut.-Col. Sir F. J. D. Lugard, K.C.M.G., C.B.*, 1895.

95. 8. 25. 5–6. Two skulls, with horns, immature. Same locality. *Same collector.*

5. 5. 10. 7. Skull, with horns, and skin. Wasé, Northern Nigeria. *Presented by Dr. H. K. W. Kumm*, 1905.

5. 5. 10. 8–9. Two skins. Same locality. *Same history.*

7. 7. 8. 241–244. Four skulls, with horns, and head-skins. Ibi, Northern Nigeria; collected during Alexander-Gosling Expedition. *Presented by the Alexander-Gosling Expedition*, 1907.

13. 8. 3. 6. Skull, with horns and skin. Upper Gambia. *Presented by G. Blaine, Esq.*, 1913.

13. 8. 3. 7. Skull, with horns. Same locality. *Same history.*

B.—Kobus kob nigricans.

Cobus nigricans, *Lydekker*, *Proc. Zool. Soc.* 1899, p. 794, pl. liii, *Game Animals of Africa*, p. 214, 1908.

Typical locality Sierra Leone.

A provisional race characterised by the dusky colour of the type specimen (a female), the hair on the middle of the back being chocolate-brown, while that on the flanks is tawny, passing into white on the under-parts; other specimens from the same district are, however, of the fulvous colour of the typical race.

99. 6. 23. 8. Skull and skin, female. Kafari, 80 miles north-west of Freetown, Sierra Leone. Type. *Purchased (Gerrard)*, 1899.

99. 6. 23. 6. Skull, with horns, and skin, immature. Sierra Leone Hinterland. *Same history.*

99. 6. 23. 5. Skull and skin, female, immature. Same locality. *Same history.*

99. 6. 23. 7. Skull, with horns, and skin, immature. Same locality. *Same history.*

99. 6. 23. 4. Skin, mounted. Same locality. The hair is wholly fulvous (rufous), as in typical race. *Same history.*

C.—Kobus kob adolfi, nom. n.

Adenota kob adolfi-friderici, *Schwarz*, *Ann. Nat. Hist.* ser. 8, vol. xi, p. 496, 1913, *nec* Kobus adolfi-friderici, *Matschie*.

Typical locality German side of the mouth of the Shari, Bornu, north-west Africa.

Type in Senckenberg Museum, Frankfort-am-Maine.

Described as larger than typical race, with the flank-zone paler, the horns stouter, and the skull relatively narrower. General colour fulvous (bistre), darker posteriorly, lighter on the shoulders and neck, and face flank-zone yellowish buff (maize-yellow), darkening on thighs; hoof-bands broad and yellowish; otherwise much as in typical race.

No specimen in collection.

D.—Kobus kob bahr-keetæ.

Adenota kob bahr-keetæ, *Schwarz*, *Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 497, 1913.

Typical locality Bahr Keeta, north-east of Fort Archambault, Upper Shari district, north-west Africa.

Type in Senckenberg Museum.

Stated to be rather smaller than preceding race, with darker flank-zone, and weaker, somewhat deflected horns. General colour deep fulvous (brownish terra-cotta), darker posteriorly, lighter on shoulders, neck, and face; flank-zone light fulvous, darkening on thighs (buff); otherwise as in typical race.

No specimen in collection.

E.—Kobus kob ubangiensis.

Adenota kob ubangiensis, *Schwarz*, *Ann. Mag. Nat. Hist.* ser. 8, vol. xi, p. 498, 1913.

Typical locality Duma, near Libenge, Ubangui (Ubangi) Valley, north-west Africa.

Type in Senckenberg Museum.

Darker than preceding race, with a distinct black suffusion. General colour much like the "ru ochre" of the "Réport de Couleurs," but somewhat more brownish, and distinctly but

finely speckled with black, especially posteriorly; no speckling on legs, neck, shoulders, and face; flank-zone "cinnamon," thighs only slightly darker; black markings and distribution of white as in preceding race.

Schwarz remarks that this and the two preceding forms are very closely allied, and that more material from intermediate localities will certainly show them to intergrade, but the extremes at hand are different enough from each other to deserve subspecific rank.

F.—Kobus kob aluræ.

Adenota kob aluræ, *Heller*, *Smithson. Misc. Collect.* vol. lxi, no. 7, p. 11, 1913.

Typical locality Lado Enclave.

Type in U. S. National Museum.

Similar in colour to the next race, but smaller, approaching in this respect the typical *kob;* the hair is also shorter, the skull is smaller and flatter, the hoofs are shorter, and the white area round the eyes is very much larger, including the whole orbital region, while the backs of the ears show a tendency to whiteness, being in some cases uniformly buff, without black tips.

No specimen in collection.

G.—Kobus kob loderi.

Cobus vardoni loderi, *Lydekker*, *Proc. Zool. Soc.* 1899, p. 984, *Game Animals of Africa*, p. 215, 1908; *Ward*, *Records of Big Game*, p. 212, 1910.

Cobus loderi, *Rothschild*, *Powell-Cotton's Sporting Trip through Abyssinia*, p. 467, 1902.

(?) Adenota pousarguesi, *O. Neumann*, *Sitzber. Ges. nat. Freunde*, 1905, p. 91.

(?) Cobus coba pousarguesi, *Lydekker*, *Game Animals of Africa*, p. 210, 1908.

Typical locality unknown.

Type in collection of Sir E. G. Loder, Leonardslee, Horsham, Sussex.

Described from a skull and horns, the latter of which are characterised by their stoutness and the shortness of their tips, and carry seventeen ridges; in form they are inter-

mediate between those of typical *kob* and those of *vardoni*. They measure 21* inches in length, with a girth of 8 inches, and a tip-to-tip interval of $8\frac{1}{4}$ inches.

Adenota pousarguesi, of which the typical locality is the Sanaga Valley, southern Cameruns, differs from typical *kob*

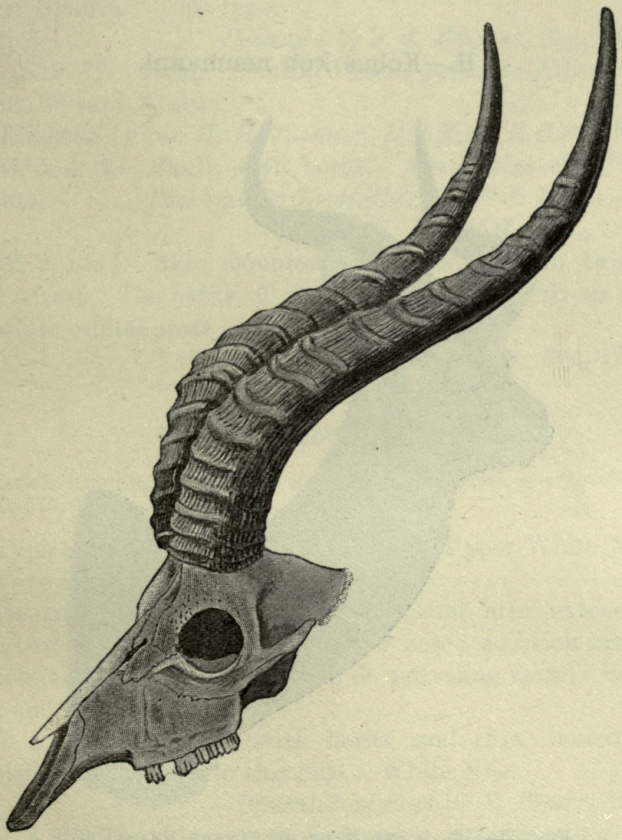


Fig. 32.—Skull (wanting lower Jaw) and Horns of Loder's Kob (*Kobus kob loderi*).

From *Proc. Zool. Soc.* 1899, p. 983.

by the darker rufous of the coat, the absence of white above the eye, and the stouter and less elegantly curved horns, which have shorter tips, and in general form are intermediate between those of typical *kob* and those of *vardoni*.

* According to Ward's measurement.

With the present information it seems impossible to distinguish *loderi* from *pousarguesi;* but if they be not identical, the latter will, of course, be entitled to rank as another race of the present species.

No specimen in the collection.

H.—Kobus kob neumanni.



Fig. 33.—Head and Neck of Albert Nyanza Kob (*Kobus kob neumanni*).

From a photograph lent by Rowland Ward, Ltd.

Adenota kob neumanni, *Rothschild, Ann. Mag. Nat. Hist.* ser. 8, vol. xii, p. 575, 1913.

Typical locality Albert Nyanza.

Type in Tring Museum.

Paler than typical *kob*, with the white above eye pure

(instead of buffish) and continued downwards to below end of face-gland duct; size large; horns long and heavy.

1. 7. 15. 1. Skull, with horns. Albert Edward Nyanza.
Presented by J. E. S. Moore, Esq., 1901.

4. 3. 25. 1. Skull, with horns, and skin. South end of Albert Nyanza. Topo-type.
Presented by J. J. Behrens, Esq., 1904.

1. 8. 9. 77. Skin. Semliki Plains, between Albert and Albert Edward Nyanza.
Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1901.

94. 5. 4. 3. Skull, with horns. South-west of Albert Nyanza. *Presented by Lieut.-Col. Sir F. J. D. Lugard, K.C.M.G., C.B.*, 1894.

12. 9. 14. 1. Skin, mounted. Near Guasin-gishu, British East Africa. The backs of the ears are mainly fulvous and the white orbital areas large.
Presented by C. Bulpett, Esq., 1912.

I.—Kobus kob notatus.

Adenota kob notata, *Rothschild*, *Ann. Mag. Nat. Hist.* ser. 8, vol. xii, p. 575, 1913.

Typical locality Gebel Achmed Agha, Upper White Nile. Type in Tring Museum.

General colour fulvous; white orbital area extending from base of horns half-way down to nose; no black ear-tip (which is present in most or all of preceding races); horns long and slender.

0. 8. 6. 16. Skull, with horns, and skin, immature, provisionally referred to this race. White Nile.
Presented by Capt. S. S. Flower, 1900.

0. 8. 6. 17. Skin, immature female. Same locality.
Same history.

1. 4. 22. 1. Skull, with horns, and skin (head-skin separate). Gebel Achmed Agha, White Nile. Topotype.
Presented by E. N. Buxton, Esq., 1901.

1. 4. 22. 1. Head-skin and skull, with horns. Same locality. *Same history.*

J.—Kobus kob thomasi.

Kobus leucotis, *Sclater*, *Proc. Zool. Soc.* 1864, p. 103, nec *Lichtenstein and Peters.*

Kobus kob, *Ward*, *Records of Big Game*, p. 91, 1892; *Lugard*, *East Africa*, vol. i, p. 538, 1893; *Jackson*, *Big Game Shooting* (*Badminton Libr.*) vol. i, p. 296, 1894; *Scott-Elliot*, *Proc. Zool. Soc.* 1895, p. 341; *nec* Antilope kob, *Erxleben.*

Adenota kob, *Matschie*, *Säugethiere Deutsch-Ostafrika*, p. 126, 1895.

Adenota koba, *Matschie*, *op. cit.* p. 147, 1895.

Cobus thomasi, *Sclater* (*ex Neumann*), *Proc. Zool. Soc.* 1895, p. 868; *Ward*, *Records of Big Game*, ed. 2, p. 128, 1896; *Sclater and Thomas*, *Book of Antelopes*, vol. ii. p. 131, pl. xxxix, 1896; *Lydekker*, *Great and Small Game of Africa*, p. 269, 1899; *Jackson*, *ibid.* p. 289; *Rothschild*, *Powell-Cotton's Trip through Abyssinia*, p. 467, 1902; *Alexander*, *From Niger to Nile*, vol. ii, p. 392, 1907.

Adenota thomasi, *O. Neumann*, *Proc. Zool. Soc.* 1896, p. 193, *Sitzber. Ges. nat. Freunde*, 1900, p. 560; *Pousargues*, *Ann. Sci. Nat.*, *Zool.* ser. 7, vol. iv, p. 74, 1897; *Cabrera*, *Cat. Met. Mam. Mus. Madrid*, p. 126, 1912.

Cobus coba thomasi, *Lydekker*, *Game Animals of Africa*, p. 211, 1908; *Ward*, *Records of Big Game*, ed. 6, p. 205, 1910.

Kobus cob thomasi, *Roosevelt*, *African Game Trails*, p. 487, 1910.

Adenota kob thomasi, *Heller*, *Smithson. Misc. Collect.* vol. lxi, no. 7, p. 11, 1913.

Cobus (Adenota) thomasi, *Revilliod*, *Verh. nat. Ges. Basle*, vol. xxiv, p. 210, 1913.

Typical locality Berkeley Bay, Victoria Nyanza.

Similar in general character and marking to typical *kob*, but considerably larger—shoulder-height about 35½ inches—and the markings more distinct, those of the legs being a deeper black, light orbital region narrow and white above eye, pale buff below. Horns short and slender, with long tips; fine specimens measuring from 20 to 24¼ inches, with a girth, usually, of from about 6 to 7¾ inches (occasionally 8¼ or 8½), and a tip-to-tip interval of from 5 to 16½ inches. In the plate in *The Book of Antelopes* the white hoof-bands are not shown.

The range includes Kavirondo and the neighbouring districts.

94. 3. 14. 2. Body-skin. Berkeley Bay, Victoria Nyanza; collected by E. Gedge, Esq. Pertains to same animal as the type head (*P.Z.S.* 1895, p. 865, fig.), which was then in Mr. Gedge's collection.

Presented by J. Rowland Ward, Esq., 1894.

91. 1. 6. 1. Skin, mounted, and skull. Kavirondo, East Central Africa.

Presented by Sir F. J. Jackson, K.C.M.G., C.B., 1891.

63. 7. 7. 8. Head, mounted. Uganda.

Presented by Capt. J. H. Speke, 1863.

95. 3. 5. 6. Skin. Uganda.

Presented by G. F. Scott-Elliot, Esq., 1895.

95 3. 5. 8. Skull, with horns. Same locality.

Same history.

1. 8. 9. 126. Skull, with horns. Toro, Uganda.

Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1901.

2. 4. 8. 5. Skull, with horns. Kagera Valley, Ankoli, south-west Uganda. *Presented by Capt. Fisher*, 1902.

K.—Kobus kob nigroscapulatus.

Adenota nigroscapulata, *Matschie, Sitzber. Ges. nat. Freunde*, 1899, p. 15; *Heller, Smithson. Misc. Collect.* vol. lxi, no. 7, p. 12, 1913.

Cobus nigroscapulatus, *Rothschild, Powell-Cotton's Sporting Trip through Abyssinia*, p. 467, 1902.

Cobus vaughani, *Lydekker, Field*, vol. cviii, p. 693, 1906, *Game Animals of Africa*, p. 207, 1908; *Ward, Records of Big Game*, ed. 6, p. 202, 1910; *Selous, Field*, vol. cxviii, p. 551, 1911.

Cobus coba nigroscapulatus, *Lydekker, Game Animals of Africa*, p. 210, 1908.

Adenota [kob] vaughani, *Heller, Smithson. Misc. Collect.* vol. lxi, no. 7, p. 12, 1913.

Kobus vaughani, *Roosevelt, S. African Game Trails*, p. 487, 1910.

Typical locality Bahr-el-Ghebel, a little west of the Mongalla district of the Sudan.

Type in Zoological Museum, Darmstadt.

General colour-pattern similar to that of next race (*leucotis*), but dark area in black phase much mixed with fulvous hairs; light phase (*vaughani*) fulvous. The type specimen was probably in the intermediate stage, being described as having an oval black spot on the nose, and a broad black band on each side of the neck bordering the white of the chest. Heller regards this form as inseparable from *leucotis*.

6. 7. 13. 1. Skull, with horns, and head-skin. Khor Lowala, between Mongalla and Gondokoro.

Presented by Crauford Logan, Esq., 1906.

60. 4. 20. 5. Skull, with horns, and head-skin. Bahr-el-Ghazal Valley; collected by Consul J. Petherick. The reference of this and the five following specimens to this race is provisional. *Purchased (Stevens)*, 1860.

60. 4. 20. 6. Skull, with horns, and head-skin. Same locality and collector. *Same history.*

59. 9. 25. 5. Skull, with horns, and skin. Awan, Bahr-el-Ghazal; same collector. *Purchased*, 1859.

59. 9. 25. 6. Skull, immature. Rek, Bahr-el-Ghazal; same collector. *Same history.*

59. 9. 25. 7. Skull, female. Same locality and collector. *Same history.*

8. 6. 25. 1. Head, mounted. Bahr-el-Ghazal. *Presented by Norman B. Smith, Esq.*, 1908.

12. 6. 25. 1. Skull, with horns, and skin. Bahr-el-Ghazal Valley. *Presented by Capt. Hunter Little*, 1912.

6. 10. 20. 1. Head mounted; fulvous phase. Wau, Bahr-el-Ghazal. Type of *vaughani*. In this specimen the general type of colouring is very similar to that of *leucotis*, both surfaces of the ears, and a large patch extending from them to surround each eye, the muzzle, chin, and upper part of throat, as well as the lower portion of the chest, being white; elsewhere general colour of head bright fulvous (foxy red), with a tinge of brown along middle of nose; base of ears externally fulvous, and white area between eye and ear rather smaller than in next race.

Presented by Capt. P. E. Vaughan, 1906.

L.—Kobus kob leucotis.

Antilope leucotis, *Lichtenstein and Peters, Monatsber. Ak. Berlin*, 1853, p. 164, *Abh. Ak. Berlin*, p. 96, 1854; *Schweinfurth, Im Herzen Afrika*, vol. i, p. 213, vol. ii, p. 533, 1874; *Huet, Bull. Soc. Acclim.* ser. 4, vol. iv, p. 38, 1887; *Emin, Reise-Briefe*, pp. 99 and 206, 1888; *Junker, Travels in Africa*, p. 441, 1891.

Adenota lechee, *Gray, Ann. Mag. Nat. Hist.* ser. 3, vol. iv, p. 296, 1859, *nec ejusdem*, 1850.

Kobus leucotis, *Gerrard, Cat. Bones Mamm. Brit. Mus.* p. 239, 1862; *Gray, Cat. Ruminants Brit. Mus.* p. 16, 1872, *Hand-List Ruminants Brit. Mus.* p. 87, 1873.

Adenota leucotis, *Heuglin, Nova Acta Ac. Cæs. Leop.-Car.* vol. xxx, pt. 2, pp. 12 and 13, pl. i, fig. 4, 1863; *Heller, Smithson. Misc. Collect.* vol. lxi, no. 7, p. 11, 1913, as a race of *kob*.

(?) Adenota kul *and* A. wuil, *Heuglin, loc. cit.*

Hydrotragus leucotis, *Fitzinger, Sitzber. k. Ak. Wiss. Wien*, vol. lix, pt. 1, p. 175, 1869.

Cervicapra leucotis, *Baker, Ismailia*, vol. ii, p. 531, 1874.

Cobus leucotis, *Ward, Records of Big Game*, p. 91, 1892, ed. 6, p. 200, 1910; *Lydekker, Horns and Hoofs*, p. 224, 1893, *Great and Small Game of Africa*, p. 269, 1899, *Field*, vol. cviii. p. 138, 1906, *Game Animals of Africa*, p. 206, 1908; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 127, pl. xxxviii, 1896; *Bryden, Great and Small Game of Africa*, p. 287, 1899; *Thomas, Proc. Zool. Soc.* 1900, p. 85; *Rothschild, Powell-Cotton's Sporting Trip through Abyssinia*, p. 467, 1902.

Cobus (Adenota) leucotis, *Revilliod, Verh. nat. Ges. Basle*, vol. xxxiv, p. 210, 1913.

Typical locality swamps of the White Nile, about sixty miles below Khartum.

Type in Zoological Museum, Berlin.

Size approximately the same as in *thomasi*. General colour—in adult bucks—deep black; a large patch round the eyes and ears of each side, the whole of the backs of the ears, the muzzle, chin, and upper part of throat, together with chest and inner sides of upper portion of limbs, white; fronts of fore-legs and lower part of those of hind pair, with the exception of a broad white hoof-band to each, blackish; horns relatively slender. Young males, and apparently females at all ages, fulvous. Good horns measure from 21 to $22\frac{1}{4}$ inches in length (in one case, if rightly determined, $24\frac{3}{4}$), with a girth of from 6 to $7\frac{1}{2}$ inches, and a tip-to-tip interval of from $6\frac{5}{8}$ to $15\frac{3}{4}$ inches. Whether some or all adult bucks assume a seasonal fulvous phase is not known.

The range embraces the swamps of the Upper Nile region, inclusive of the Sobat.

0. 8. 7. 3. Skin, mounted. White Nile. This and the two following specimens appear to be in some degree intermediate between typical *leucotis* and *nigroscapulatus*.

Presented by Major H. N. Dunn, 1900.

0. 8. 7. 4. Skull, with horns, and skin. Same locality.

Same history.

0. 8. 7. 5. Skin. Same locality. *Same history.*

VIII. KOBUS (ADENOTA) VARDONI.

Antilope vardoni, *Livingstone, Missionary Travels S. Africa*, p. 256 and pl. p. 71, 1857.

Heleotragus vardonii, *Kirk, Proc. Zool. Soc.* 1864, p. 657.

Cobus vardoni, *Selous, Proc. Zool. Soc.* 1881, p. 759, pl. lxv, *A Hunter's Wanderings in S. Africa*, pp. 111, 147 and 219, pl. v, 1881, *Great and Small Game of Africa*, p. 294, 1909; *Ward, Records of Big Game*, p. 9, 1892, ed. 6, p. 211, 1910; *Sclater, Proc. Zool. Soc.* 1892, p. 98, 1893, p. 728; *Lydekker, Horns and Hoofs*, p. 227, 1893, *Great and Small Game of Africa*, p. 269, 1899, *Game Animals of Africa*, p. 215, 1908; *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 141, pl. xli, 1896; *W. L. Sclater, Fauna S. Africa, Mamm.* vol. i, p. 191, 1900; *Rothschild, Powell-Cotton's Sporting Trip through Abyssinia*, p. 467, 1902; *Letcher, Big Game N.E. Rhodesia*, p. 197, 1911.

Eleotragus vardoni, *Huet, Bull. Soc. Acclim.* 1887, p. 48; *Matschie, Sitzber. Ges. nat. Freunde*, 1891, p. 138.

Kobus vardoni, *Nicholls and Eglington, Sportsman in S. Africa*, p. 43, 1892.

Adenota vardoni, *Matschie, Säugethiere Deutsch-Ostafrika*, p. 126, 1895; *Pousargues, Ann. Sci. Nat., Zool.* ser. 7, vol. iv, p. 72, 1897.

Puku, Pookoo, or Poku.

Typical locality apparently the Chobi Valley, Zambesia.

Distinguished from all the races of the preceding species by the absence of black markings on the legs, the longer and rougher coat, and the practical or complete absence of white hoof-bands. General colour very similar to that of *K. kob thomasi*, the white orbital area being small, and the backs of the ears fulvous, with black tips. Horns relatively short and stout; good specimens measure from 18 to 20¾ inches in length, with a girth of from 6½ to 8½, and a tip-to-tip interval of from 4 to 17 inches.

The range extends from the Zambesi and Chobi Valleys, through Barotsiland, to Lakes Mweru and Bangweolo.

The two races (exclusive of *loderi*, which is classed above as a race of *kob*) are distinguished as follows:—

A. Size larger, shoulder-height about 35½ inches; black ear-tips small *K. v. vardoni.*

B. Size smaller; black ear-tips larger, and general colour darker *K. v. senganus.*

A.—Kobus vardoni vardoni.

Cobus vardoni typicus, *Selous, Great and Small Game of Africa*, p. 294, 1899; *Ward, Records of Big Game*, ed. 6, p. 211, 1910.

Typical locality apparently the Chobi Valley.

Shoulder-height about 35½ inches; black ear-tips small.

81. 4. 20. 2. Skin, mounted. Umparvia, Chobi Valley; collected by F. C. Selous, Esq. *Purchased*, 1881.

81. 4. 20. 3. Skin, mounted, female. Same locality and collector. *Same history.*

63. 8. 4. 2. Frontlet and horns. Zambesia; collected by G. W. Clapp, Esq. *Purchased*, 1863.

93. 7. 25. 6. Skull, with horns. Lake Mweru; collected by R. Crawshay, Esq.

Presented by Sir H. H. Johnston, G.C.M.G., K.C.B., 1893.

93. 7. 25. 7. Skull, with horns. Same locality and collector. *Same history.*

94. 3. 8. 10. Skull, with horns, and skin. Same locality; collected by Sir Alfred Sharpe, K.C.M.G. *Purchased*, 1894.

2. 4. 21. 1. Skin, mounted. Same locality; collected by R. T. Coryndon, Esq. *Purchased (Ward)*, 1902.

8. 7. 12. 1. Head, mounted. Choma district, Lake Mweru. *Presented by J. Rowland Ward, Esq.*, 1908.

1. 5. 3. 3. Skull, with horns, and skin. Loangwa Valley, Lake Mweru. *Presented by R. T. Coryndon, Esq.*, 1901.

6. 5. 2. 3. Skin. Loangwa Valley.

Presented by H. Cookson, Esq., 1906.

7. 11. 15. 5. Skull, with horns, and head-skin, immature. Kalungwisi Valley, Lake Mweru.

Presented by R. L. Harger, Esq., 1907.

12. 3. 16. 2. Skull, with horns. Lipashoski Valley, Lake Bangweolo. *Presented by the Hon. W. Guinness*, 1912.

98. 5. 22. 24. Skull and skin, female. Urori, Nyasaland.

Presented by Sir Alfred Sharpe, K.C.M.G., C.B., 1898.

B.—Kobus vardoni senganus.

Cobus senganus, *Sclater and Thomas, Book of Antelopes*, vol. ii, p. 145, 1896; *Lydekker, Proc. Zool. Soc.* 1899, p. 794; *Rothschild, Powell-Cotton's Sporting Trip through Abyssinia*, p. 467, 1902.

Cobus vardoni senganus, *Bryden, Great and Small Game of Africa*, p. 299, 1899; *Lydekker, Game Animals of Africa*, p. 215, 1908.

Typical locality Senga, Upper Loangwa Valley, west of north end of Lake Nyasa. Smaller and darker coloured (especially on head) than typical race, with the black of ear-tips occupying fully one-third the length of backs of ears, instead of being restricted to summits.

96. 9. 15. 1. Skull and skin, female. Upper Loangwa Valley. Type. *Presented by R. Crawshay, Esq.*, 1896.

99. 3. 21. 4. Skin, mounted, female. Barotsiland, north-west Rhodesia. *Presented by R. T. Coryndon, Esq.*, 1899.

99. 3. 21. 3. Frontlet, with horns, and skin. Same locality. *Same history.*

8. 2. 14. 18. Skin. Near junction of Bua and Rusa Rivers, South Angoniland.

Presented by C. B. C. Storey, Esq., 1908.

INDEX

OF GENERA AND SPECIES

abyssinica nyansæ, Sylvicapra, 118
abyssinica, Sylvicapra, 117
abyssinicus, Cephalophus, 117
abyssinicus, Cephalophus grimmi, 117
abyssinicus hindei, Cephalophus, 119
abyssinicus shirensis, Cephalophus, 120
aceratos, Oreotragus, 130
aceratos, Oreotragus oreotragus, 130
aceratos, Oreotragus saltator, 130
Acronotus, 3
Acronotus bubalis, 5
Acronotus caama, 25
Acronotus lelwel, 19
Acronotus lunatus, 37
acuticornis, Antilope, 147
acuticornis, Antilope (Raphicerus), 147
acuticornis, Cerophorus (Cervicapra), 147
adansoni, Kobus, 253
Adenota, 253
Adenota annulipes, 254
adenota, Antilope, 253
Adenota buffoni, 254
Adenota kob, 253, 264
Adenota kob adolfi-friderici, 259
Adenota kob aluræ, 260
Adenota kob bahr-keetæ, 259
Adenota kob kob, 256
(Adenota) kob, Kobus, 253
Adenota kob neumanni, 262
Adenota kob notata, 263
Adenota kob thomasi, 264
Adenota kob ubangiensis, 259
Adenota [kob] vaughani, 265
Adenota koba, 254, 264
Adenota kul, 267
Adenota leche, 246
Adenota lechee, 247, 266
Adenota leucotis, 266
(Adenota) leucotis, Cobus, 267
Adenota megaceros, 251
Adenota nigroscapulata, 265
Adenota pousarguesi, 260
Adenota sing-sing, 242
Adenota thomasi, 264
(Adenota) thomasi, Cobus, 264
Adenota vardoni, 268
(Adenota) vardoni, Kobus, 268
Adenota wuil, 267
adolfi, Kobus kob, 259
adolfi-frederici, Cobus ellipsiprymnus, 235
adolfi-friderici, Adenota kob, 259
adolfi-friderici, Kobus, 235
adrob, Cervicapra, 214
æquatoria, Ourebia montana, 140
æquatorialis, Cephalophus, 98
æquatorialis, Cephalophus melanorheus, 98
æquatorialis, Guevei, 98
æquinoctialis, Cephalophus, 98
Aigoceros ellipsiprymnus, 226
Aigocerus ellipsiprymnus, 226
akeleyi, Neotragus moschatus, 161
albertensis, Kobus defassa, 238
albifrons, Alcelaphus, 35
albifrons, Antilope, 35, 113
albifrons, Bubalis, 35
albifrons, Damalis, 35
albifrons, Damaliscus, 35
albifrons, Gazella, 35
albojubatus, Connochætes, 58
albojubatus, Connochætes taurinus, 58
albojubatus, Gorgon, 58
Alcelaphus, 3
Alcelaphus albifrons, 35
Alcelaphus bubale, 5
Alcelaphus bubalinus, 5
Alcelaphus bubalis, 5
(Alcelaphus) bubalis, Cerophorus, 5
Alcelaphus caama, 25

(Alcelaphus) caama, Cerophorus, 25
Alcelaphus cokei, 13
Alcelaphus (Damalis) hunteri, 46
Alcelaphus hunteri, 46
Alcelaphus lichtensteini, 29
Alcelaphus lunatus, 37
Alcelaphus pygargus, 34
Alcelaphus tora, 8
altifrons, Antilope, 113
altifrons, Cephalophus, 113
altifrons, Cephalophus grimmi, 113
altivallis, Cephalophus grimmi, 120
altivallis, Sylvicapra grimmi, 120
aluræ, Adenota kob, 260
aluræ, Kobus kob, 260
amœnus, Cephalophus natalensis, 69
anchietæ, Cephalophus, 98
anchietæ, Cephalophus melanorheus, 98
angusticeps, Kobus defassa, 237
annectens, Kobus defassa, 236
annulipes, Adenota, 254
annulipes, Antilope, 253
Antilope acuticornis, 147
Antilope adenota, 253
Antilope albifrons, 35
Antilope altifrons, 113
Antilope annulipes, 253
Antilope arundinaceus, 204
Antilope arundinum, 203
Antilope (Boselaphus) gnu, 51
Antilope brevicaudata, 138
Antilope bubalis, 4
Antilope burchelli, 108
Antilope buselaphus, 4
Antilope caama, 24
Antilope campestris, 146, 147
Antilope capensis, 51, 147
Antilope capreolus, 199
Antilope (Cephalolophus) campbelliæ, 116
Antilope (Cephalolophus) maxwelli, 94
Antilope (Cephalolophus) natalensis, 68
Antilope (Cephalolophus) rufilatus, 87
Antilope (Cephalophus) burchelli, 107
Antilope (Cephalophus) cærulea, 100
Antilope (Cephalophus) coronatus, 115
Antilope (Cephalophus) dorsalis, 80
Antilope (Cephalophus) maxwelli, 93 ,94
Antilope (Cephalophus) melanorheus, 96
Antilope (Cephalophus) ogilbyi, 83
Antilope (Cephalophus) perpusilla, 101
Antilope (Cephalophus) philantomba, 93
Antilope (Cephalophus) platous, 107
Antilope (Cephalophus) platyotus, 108
Antilope (Cephalophus) sylvicultrix, 63
Antilope cinerea, 204
Antilope cœrulescens, 204
Antilope defassa, 232, 242
Antilope dorcas, 33
Antilope doria, 89
Antilope eleotragus, 203, 221
Antilope ellipsiprymnus, 226
Antilope elypsiprymnus, 227
Antilope forfex, 253
Antilope frederici, 94
Antilope fulvo-rufescens, 147
Antilope fulvorufula, 220
Antilope (Gazella) capreolus, 199
Antilope (Gazella) grimmia, 114
Antilope (Gazella) oreotragus, 124
Antilope (Gazella) pygmæa, 169
Antilope gnou, 50
Antilope gnu, 50
Antilope gorgon, 54
Antilope grimmia, 114
Antilope (Grimmia) grimmia, 86
Antilope (Grimmia) mergens, 108
Antilope (Grimmia) sylvicultrix, 63
Antilope grisea, 33, 156
Antilope harnieri, 234
Antilope hastata, 135
Antilope hemprichiana, 174
Antilope hemprichii, 174
Antilope ibex, 147
Antilope isabellina, 204
Antilope klippspringer, 123
Antilope kob, 253
Antilope koba, 241
Antilope lalandia, 220
Antilope lalandii, 221

Antilope lanata, 200
Antilope landiana, 220
Antilope leucotis, 266
Antilope lichtensteini, 29
Antilope lunata, 37
Antilope maculata, 33
Antilope madoka, 174
Antilope madoqua, 117, 175
Antilope maxwelli, 94
Antilope melanotis, 155
Antilope melanura, 133
Antilope mergens, 107
Antilope minuta, 101
Antilope montana, 138
Antilope monticola, 100
Antilope moschata, 160
Antilope (Nagor) redunca, 211
Antilope (Neotragus) madoka, 174
Antilope (Neotragus) pygmæa, 169
Antilope (Neotragus) saltiana, 174
Antilope nictitans, 107
Antilope ocularis, 113
Antilope (Œgocerus) ellipsiprymnus, 226
Antilope ogilbyi, 83
Antilope oleotragus, 204
Antilope oreotragus, 123, 204
Antilope ourebi, 133
Antilope (Ourebia) oreotragus, 124
Antilope (Ourebia) scoparia, 133
Antilope pallida, 157
Antilope pediotragus, 157
Antilope perpusilla, 170
Antilope personata, 33
Antilope perspisilla, 101
Antilope pluto, 91
Antilope ptox, 108
Antilope pygarga, 33
Antilope pygmæa, 100, 169
Antilope (Raphicerus) acuticornis, 147
Antilope (Raphicerus) subulata, 147
Antilope redunca, 211, 214
Antilope (Redunca) bohor, 214
Antilope (Redunca) eleotragus, 204
Antilope (Redunca) redunca, 211
Antilope (Redunca) villosa, 200
Antilope regia, 169
Antilope reversa, 211
Antilope rubro-albescens, 156
Antilope rufa, 211
Antilope rufescens, 157
Antilope rupestris, 147
Antilope saltatrix, 123
Antilope saltatrixoides, 124
Antilope saltiana, 174
Antilope scoparia, 133
Antilope senegalensis, 39, 242
Antilope silvicultrix, 63
Antilope sing-sing, 241
Antilope spinigera, 169
Antilope (Spinigera) spiniger, 169
Antilope sylvicultrix, 63
Antilope taurina, 54
Antilope (Terpone) longiceps, 66
Antilope (Tragelaphus) ogilbyi, 83
Antilope tragulus, 146
Antilope tragulus melanotis, 156
Antilope (Tragulus) oreotragus, 124
Antilope tragulus pallida, 157
Antilope tragulus rupestris, 147
Antilope unctuosa, 241
Antilope vardoni, 268
Antilope villosa, 200
Antilope zebra, 89
Antilope zebrata, 89
arundinacea, Cemas, 204
arundinacea, Cervicapra, 205
arundinaceus, Antilope, 204
arundinaceus, Eleotragus, 204, 214, 221
arundineum occidentalis, Cervicapra, 210
arundinum, Antilope, 203
arundinum, Cervicapra, 205
arundinum occidentalis, Redunca, 210
arundinum, Redunca, 205
arundinum, Redunca arundinum, 206
arundinum, Redunca (Eleotragus), 203
aureus, Cephalophus, 72
aureus, Oreotragus oreotragus, 127
avellanifrons, Kobus defassa, 237

badius, Cephalophus, 80
bahr-keetæ, Adenota kob, 259
bahr-keetæ, Kobus kob, 259
Baira, 196
batesi, Hylarnus, 166
batesi, Neotragus, 166
batesi, Neotragus (Hylarnus), 166
Beatragus, 32
Beatragus hunteri, 46
Beira, 196
Beni Israel, 175

bicolor, Cephalophus, 101
Blesbok, 36
Blue Wildebeest, 55
Bohor, 212, 214
bohor, Antilope (Redunca), 214
bohor, Cervicapra, 214, 215
bohor, Cervicapra redunca, 214
bohor cottoni, Cervicapra, 217
bohor, Eleotragus, 214
bohor nigeriensis, Cervicapra, 219
bohor, Redunca, 214
bohor, Redunca redunca, 214
bohor ugandæ, Cervicapra, 220
bohor wardi, Cervicapra, 215
Bontebok, 34
Bos connochætes, 51
Bos gnou, 50
Bos gnu, 51
Boselaphus bubalis, 5, 8
boselaphus, Bubalis, 5, 8
Boselaphus caama, 25
(Boselaphus) gnu, Antilope, 51
(Boselaphus) gnu, Cerophorus, 51
Boselaphus lichtensteini, 29
Boselaphus major, 6
bradshawi, Cephalophus natalensis, 71
brevicaudata, Antilope, 138
breviceps, Cephalophus, 80
breviceps, Kobus defassa, 238
Brindled Gnu, 55
brookei, Cephalophus, 84
brookii, Catoblepas, 59
bubale, Alcelaphus, 5
Bubalinæ, 2
bubalinus, Alcelaphus, 5
Bubalis, 3
bubalis, Acronotus, 5
Bubalis albifrons, 35
bubalis, Alcelaphus, 5
bubalis, Antilope, 4
Bubalis boselaphus, 5
bubalis, Boselaphus, 5, 8
Bubalis bubalis, 5, 8
bubalis, Bubalis, 5, 8
Bubalis buselaphus, 4, 5
Bubalis caama, 24
Bubalis caama caama, 27
Bubalis caama selbornei, 27
Bubalis cama, 25
bubalis, Cerophorus (Alcelaphus), 5
Bubalis cokei, 13
Bubalis cokei cokei, 15
Bubalis cokei kongoni, 17
Bubalis cokei nakuræ, 16
Bubalis cokei rothschildi, 16
bubalis, Damalis, 5
Bubalis hunteri, 46
Bubalis jacksoni, 21
Bubalis jacksoni insignis, 23
Bubalis jimeru, 44
Bubalis koba, 42
Bubalis lelwel, 19, 21
Bubalis lelwel insignis, 23
Bubalis lelwel jacksoni, 21
Bubalis lelwel lelwel, 20
Bubalis lelwel niediecki, 23
Bubalis lelwel roosevelti, 24
Bubalis lelwel tschadensis, 20
Bubalis lelwel typica, 20
Bubalis leucoprymnus, 29
Bubalis lichtensteini, 29
Bubalis lunatus, 37
Bubalis major, 6
Bubalis mauretanica, 5
Bubalis nakuræ, 16
Bubalis neumanni, 18
Bubalis niediecki, 23
Bubalis noacki, 13
Bubalis pygarga, 34
Bubalis rothschildi, 16
Bubalis swaynei, 12
Bubalis tora, 8, 9
Bubalis tora digglei, 11
Bubalis tora neumanni, 18
Bubalis tora noacki, 13
Bubalis tora rahatensis, 11
Bubalis tora swaynei, 12
Bubalis tora tora, 10
Bubalis tora typica, 10
Bubalus gnu, 52
Bubalus lunatus, 37, 42
Bubalus mauritanicus, 5
buffoni, Adenota, 254
Buffon's Kob, 256
burchelli, Antilope, 108
burchelli, Antilope (Cephalophus), 107
burchelli, Cephalophus, 107
burchelli, Grimmia, 108
buselaphus, Antilope, 4
buselaphus, Bubalis, 4, 5
Butragus, 48
Butragus corniculatus, 54

caama, Acronotus, 25
caama, Alcelaphus, 25
caama, Antilope, 24
caama, Boselaphus, 25
caama, Bubalis, 24
caama, Bubalis caama, 27

caama, Cerophorus (Alcelaphus), 25
caama, Damalis, 25
caama selbornei, Bubalis, 27
cærulea, Antilope (Cephalophus), 100
cæruleus, Cephalophus, 101
caffer, Cephalophus pygmæus, 101
caffra, Sylvicapra, 108
callipyga, Cephalophe'ia, 85
callipygus, Cephalophus, 85
Calotragus, 145
Calotragus campestris, 147
Calotragus capreolus, 200
Calotragus hastata, 135
Calotragus melanotis, 156
Calotragus melanotis pallida, 157
Calotragus montanus, 138
Calotragus oreotragus, 124
Calotragus oureby, 133
Calotragus rufescens, 157
Calotragus saltatrix, 124
Calotragus saltatrixoides, 126
Calotragus saltianus, 175
Calotragus scoparius, 133
Calotragus spiniger, 170
Calotragus tragulus, 147
cama, Bubalis, 25
campbelliæ, Antilope (Cephalophus), 116
campbelliæ, Cephalophus, 116
campbelliæ, Cephalophus grimmi, 116
campbelliæ, Grimmia, 116
campbelliæ, Sylvicapra, 116
campbelliæ, Sylvicapra coronata, 116
campestris, Antilope, 146, 147
campestris, Calotragus, 147
campestris capricornis, Raphicerus, 153
campestris capricornis, Rhaphiceros, 153
campestris, Nanotragus, 148
campestris natalensis, Raphicerus, 151
campestris, Neotragus, 148
campestris neumanni, Raphicerus, 151
campestris neumanni, Rhaphiceros, 151
campestris, Pediotragus, 148
campestris, Raphicerus, 146, 148
campestris, Raphicerus campestris, 149
campestris, Rhaphiceros, 148
campestris, Rhaphicerus, 148
campestris stigmaticus, Raphicerus, 152
campestris typicus, Rhaphiceros, 149
cana, Cemas, 107
canescens, Kobus ellipsiprymnus, 229
Cape Hartebeest, 25
capensis, Antilope, 51, 147
Capra cervicapra, 33
Capra grimmia, 107, 146
Capra monticola, 100
Capra pygmæa, 169
Capra scripta, 33
capreolus, Antilope, 199
capreolus, Antilope (Gazella), 199
capreolus, Calotragus, 200
capreolus, Cemas, 199
capreolus, Cervicapra, 200
capreolus, Eleotragus, 200
capre lus, Eleotr gus (Pelea), 200
capreolus, Pelea, 199
capreolus, Redunca, 200
capricornis, Raphicerus campestris, 153
capricornis, Raphicerus neumanni, 153
capricornis, Rhaphiceros campestris, 153
castaneus, Cephalophus, 81
castaneus, Cephalophus dorsalis, 81
Catoblepas, 48
Catoblepas brookii, 59
Catoblepas gnu, 51
Catoblepas gorgon, 54
Catoblepas operculatus, 51
Catoblepas reichei, 55
Catoblepas taurinus, 54
cavendishi, Madoqua, 185
cavendishi, Madoqua cavendishi, 186
cavendishi, Madoqua (Rhynchotragus), 185
cavendishi minor, Madoqua, 187
cavendishi minor, Rhynchotragus, 187
cavendishi, Rhynchotragus, 185
Cemas, 48
Cemas arundinacea, 204
Cemas cana, 107
Cemas capreolus, 199
Cemas gnu, 51
Cemas melanura, 133

Cemas oreotragus, 124
Cemas pygmæa, 169
centralis, Cephalophus, 71
Cephalolophus, 60
(Cephalolophus) campbelliæ, Antilope, 116
(Cephalolophus) maxwelli, Antilope, 94
(Cephalolophus) natalensis, Antilope, 68
(Cephalolophus) rufilatus, Antilope, 87
Cephalophela, 63
Cephalophela doriæ, 90
Cephalophelia, 63
Cephalophelia callipyga, 85
Cephalophia, 63
Cephalophia ogilbyi, 83
Cephalophorus natalensis, 68
Cephalophorus ogilbyi, 83
Cephalophorus pygmæus, 169
Cephalophorus zanzibaricus, 160
Cephalophorus zebra, 89
Cephalophus, 60, 63
Cephalophus abyssinicus, 117
Cephalophus abyssinicus hindei, 119
Cephalophus abyssinicus shirensis, 120
Cephalophus æquatorialis, 98
Cephalophus æquinoctialis, 98
Cephalophus altifrons, 113
Cephalophus anchietæ, 98
Cephalophus aureus, 72
Cephalophus badius, 80
Cephalophus bicolor, 101
Cephalophus breviceps, 80
Cephalophus brookei, 84
Cephalophus burchelli, 107
(Cephalophus) burchelli, Antilope, 107
(Cephalophus) cærulea, Antilope, 100
Cephalophus cæruleus, 101
Cephalophus callipygus, 85
Cephalophus campbelliæ, 116
Cephalophus castaneus, 81
Cephalophus centralis, 71
Cephalophus claudi, 73
Cephalophus coronatus, 114
(Cephalophus) coronatus, Antilope, 115
Cephalophus coxi, 64
Cephalophus doria, 89
Cephalophus doriæ, 89, 90
Cephalophus dorsalis, 80
(Cephalophus) dorsalis, Antilope, 80
Cephalophus dorsalis castaneus, 81
Cephalophus emini, 83
Cephalophus frederici, 94
Cephalophus grimmi, 108
Cephalophus grimmi abyssinicus, 117
Cephalophus grimmi altifrons, 113
Cephalophus grimmi altivallis, 120
Cephalophus grimmi campbelliæ, 116
Cephalophus grimmi coronatus, 114
Cephalophus grimmi flavescens, 112
Cephalophus grimmi grimmi, 110
Cephalophus grimmi hindei, 119
Cephalophus grimmi nyansæ, 118
Cephalophus grimmi roosevelti, 121
Cephalophus grimmi shirensis, 120
Cephalophus grimmi splendidulus, 114
Cephalophus grimmia, 86, 108, 114
Cephalophus grimmia flavescens, 112
Cephalophus grimmius, 108
Cephalophus (Guevei) hecki, 105
Cephalophus (Guevei) lugens, 106
Cephalophus (Guevei) maxwelli, 93, 94
Cephalophus (Guevei) melanorheus, 96
Cephalophus (Guevei) monticola, 100
Cephalophus (Guevei) nyasæ, 103
Cephalophus (Guevei) simpsoni, 105
Cephalophus harveyi, 76
Cephalophus harveyi harveyi, 77
Cephalophus harveyi keniæ, 77
Cephalophus hecki, 105
Cephalophus hemprichianus, 184
Cephalophus ignifer, 75
Cephalophus ituriensis, 64
Cephalophus jentinki, 66
Cephalophus johnstoni, 75
Cephalophus leopoldi, 78
Cephalophus leucochilus, 82
Cephalophus leucogaster, 79
Cephalophus leucoprosopus, 121
Cephalophus longiceps, 64

Cephalophus lugens, 106
Cephalophus madoqua, 117
Cephalophus maxwelli, 93
(Cephalophus) maxwelli, Antilope, 93
Cephalophus melanoprymnus, 64
Cephalophus melanorheneus, 96
Cephalophus melanorheus æquatorialis, 98
Cephalophus melanorheus anchietæ, 98
(Cephalophus) melanorheus, Antilope, 96
Cephalophus melanorheus melanorheus, 97
Cephalophus melanorheus musculoides, 99
Cephalophus melanorheus sundevalli, 97
Cephalophus melanorheus typicus, 97
Cephalophus mergens, 107
Cephalophus monticola, 101
Cephalophus natalensis, 68
Cephalophus natalensis amœnus, 69
Cephalophus natalensis bradshawi, 71
Cephalophus natalensis natalensis, 69
Cephalophus natalensis robertsi, 70
Cephalophus natalensis vassei, 70
Cephalophus niger, 91
Cephalophus nigrifrons, 72
Cephalophus nyasæ, 103
Cephalophus nyasæ congicus, 104
Cephalophus nyasæ defriesi, 104
Cephalophus nyasæ nyasæ, 103
Cephalophus ocularis, 113
Cephalophus ogilbyi, 83, 84
(Cephalophus) ogilbyi, Antilope, 83
Cephalophus (Ourebia) saltiana, 175
(Cephalophus) perpusilla, Antilope, 101
Cephalophus philantomba, 93
(Cephalophus) philantomba, Antilope, 93
Cephalophus platous, 107
(Cephalophus) platous, Antilope, 107
(Cephalophus) platyotus, Antilope, 108
Cephalophus ptoox, 107
Cephalophus punctulatus, 64, 94
Cephalophus pygmæus, 101
Cephalophus pygmæus caffer, 101
Cephalophus pygmæus sundevalli, 97
Cephalophus robertsi, 70
Cephalophus rubidus, 73
Cephalophus ruficrista, 64
Cephalophus rufilatus, 86
Cephalophus rufilatus cuvieri, 87
Cephalophus rufilatus rubidior, 89
Cephalophus rufilatus rufilatus, 87
Cephalophus sclateri, 64
Cephalophus simpsoni, 105
Cephalophus spadix, 67
Cephalophus spiniger, 170
Cephalophus (Sylvicapra) grimmi, 107
Cephalophus (Sylvicapra) leucoprosopus, 121
Cephalophus sylvicultor, 64
Cephalophus sylvicultor coxi, 64
Cephalophus sylvicultrix, 63
(Cephalophus) sylvicultrix, Antilope, 63
Cephalophus thomasi, 64
Cephalophus walkeri, 92
Cephalophus weynsi, 74
Cephalophus whitfieldi, 94
Cephalopidium, 63
Cephalopidium nigrum, 91
Cephalops, 63
Cephalops dorsalis, 80
Cerophorus (Alcelaphus) bubalis, 5
Cerophorus (Alcelaphus) caama, 25
Cerophorus (Boselaphus) gnu, 51
Cerophorus (Cervicapra) acuticornis, 147
Cerophorus (Cervicapra) eleotragus, 204
Cerophorus (Cervicapra) grimmia, 114
Cerophorus (Cervicapra) grisea, 156
Cerophorus (Cervicapra) oreotragus, 124
Cerophorus (Cervicapra) pygmæa, 169
Cerophorus (Cervicapra) redunca, 211
Cerophorus (Cervicapra) saltiana, 174
Cerophorus (Cervicapra) stenbock, 147

Cerophorus (Gazella) kob, 253
Cerophorus (Gazella) pygarga, 33
Cervicapra, 202
(Cervicapra) acuticornis, Cerophorus, 147
Cervicapra adrob, 214
Cervicapra arundinacea, 205
Cervicapra arundineum occidentalis, 210
Cervicapra arundinum, 205
Cervicapra bohor, 214, 215
Cervicapra bohor cottoni, 217
Cervicapra bohor nigeriensis, 219
Cervicapra bohor ugandæ, 220
Cervicapra bohor wardi, 215
cervicapra, Capra, 33
Cervicapra capreolus. 200
Cervicapra chanleri, 223
Cervicapra defassa, 232
Cervicapra eleotragus, 221
(Cervicapra) eleotragus, Cerophorus, 204
Cervicapra ellipsiprymnus, 227
Cervicapra fulvorufula, 221
Cervicapra fulvorufula chanleri, 223
Cervicapra fulvorufula shoana, 224
Cervicapra fulvorufula subalpina, 221
(Cervicapra) grimmia, Cerophorus, 114
(Cervicapra) grisea, Cerophorus, 156
Cervicapra isabellina, 204
Cervicapra lalandii, 221
Cervicapra leucotis, 267
(Cervicapra) oreotragus, Cerophorus, 124
(Cervicapra) pygmæa, Cerophorus, 169
Cervicapra redunca, 211, 221
Cervicapra redunca bohor, 214
(Cervicapra) redunca, Cerophorus, 211
Cervicapra redunca cottoni, 217
Cervicapra redunca donaldsoni, 217
Cervicapra redunca redunca, 213
Cervicapra redunca typica, 213, 219
Cervicapra redunca wardi, 215
(Cervicapra) saltiana, Cerophorus, 174
(Cervicapra) stenbok, Cerophorus, 147
Cervicapra thomasinæ, 205
Cervus pusillus guineensis, 169
Cervus pygargus, 33
Cervus sing-sing, 241
chanleri, Cervicapra, 223
chanleri, Cervicapra fulvorufula, 223
chanleri, Redunca, 223
chanleri, Redunca fulvorufula, 223
cinerea, Antilope, 204
claudi, Cephalophus, 73
coba, Cobus. 254
coba nigroscapulatus, Cobus, 265
coba pousarguesi, Cobus, 260
coba thomasi, Cobus, 264
coba typica, Cobus, 256
Cobus, 225
Cobus (Adenota) leucotis, 267
Cobus (Adenota) thomasi, 264
Cobus cob, 254
Cobus coba, 254
Cobus coba nigroscapulatus, 265
Cobus coba pousarguesi, 260
Cobus coba thomasi, 264
Cobus coba typicus, 256
Cobus crawshayi, 244
Cobus defassa, 232
Cobus defassa crawshayi, 244
Cobus defassa harnieri, 234
Cobus defassa matschiei, 234
Cobus defassa penricci, 245
Cobus defassa sing-sing, 242
Cobus defassa tjæderi, 235
Cobus defassa typicus, 238
Cobus defassa ugandæ, 240
Cobus defassa unctuosus, 242
Cobus defassus, 232
Cobus ellipsiprymnus, 227
Cobus eilipsiprymnus adolfifrederici, 235
Cobus harnieri, 234
Cobus hunteri, 46
Cobus kob, 254
Cobus leche, 247
Cobus lechee, 247
Cobus lechi, 247
Cobus lechwe, 247
Cobus leechi, 247
Cobus leucotis, 267
Cobus loderi, 260
Cobus maria, 251
Cobus mariæ, 251
Cobus nigricans, 258
Cobus nigroscapulatus, 265

Cobus onctuosus, 242
Cobus penricei, 245
Cobus robertsi, 249
Cobus senganus, 269
Cobus sing-sing, 242
Cobus smithemani, 249
Cobus smithemanni, 249
Cobus thomasi, 264
Cobus unctuosus, 242
Cobus unctuosus defassa, 238
Cobus vardoni, 268
Cobus vardoni loderi, 260
Cobus vardoni senganus, 269
Cobus vardoni typicus, 269
Cobus vaughani, 265
cœrulescens, Antilope, 204
cokei, Alcelaphus, 13
cokei, Bubalis, 13
cokei, Bubalis cokei, 15
cokei kongoni, Bubalis, 17
cokei nakuræ, Bubalis, 16
cokei rothschildi, Bubalis, 16
colonicus, Raphiceros colonicus, 155
colonicus, Raphicerus sharpei, 155
congicus, Cephalophus nyasæ, 104
Connochætes, 48
Connochætes albojubatus, 58
connochætes, Bos, 51
Connochætes gnu, 50, 51
Connochætes gorgon, 54
Connochætes hecki, 57
Connochætes johnstoni, 57
Connochætes taurinus, 54
Connochætes taurinus albojubatus, 58
Connochætes taurinus hecki, 57
Connochætes taurinus johnstoni, 57
Connochætes taurinus (johnstoni) rufigianus, 57
Connochætes taurinus taurinus, 56
Connochætes taurinus typicus, 56
Connochætes taurius, 55
cordeauxi, Madoqua, 182
cordeauxi, Rhynchotragus, 182
corniculatus, Butragus, 54
coronata campbelliæ, Sylvicapra, 116
coronata, Sylvicapra, 115
coronatus, Antilope (Cephalophus), 115
coronatus, Cephalophus, 114
coronatus, Cephalophus grimmi, 114
corrigum, Damaliscus, 40
corrigum jimela, Damaliscus, 44
corrigum jonesi, Damaliscus, 44
corrigum phalius, Damaliscus, 46
corrigum selousi, Damaliscus, 44
corrigum tiang, Damaliscus, 43
cottoni, Cervicapra bohor, 217
cottoni, Cervicapra redunca, 217
cottoni, Kobus defassa, 238
cottoni, Oribia, 144
cottoni, Ourebia, 144
cottoni, Redunca redunca, 217
coxi, Cephalophus, 64
coxi, Cephalophus sylvicultor, 64
crawshayi, Cobus, 244
crawshayi, Cobus defassa, 244
crawshayi, Kobus, 244
crawshayi, Kobus defassa, 244
cuvieri, Cephalophus rufilatus, 8

Damalis, 3, 32
Damalis albifrons, 35
Damalis bubalis, 5
Damalis caama, 25
Damalis hunteri, 46
(Damalis) hunteri, Alcelaphus, 46
Damalis jimela, 44
Damalis lunata, 37
Damalis pygarga, 33
Damalis senegalensis, 39, 42, 44
Damalis tiang, 42
Damalis tiang-riel, 42
Damalis zebra, 89
Damaliscus, 32
Damaliscus albifrons, 35
Damaliscus corrigum, 40
Damaliscus corrigum jimela, 44
Damaliscus corrigum jonesi, 44
Damaliscus corrigum phalius, 46
Damaliscus corrigum selousi, 44
Damaliscus corrigum tiang, 43
Damaliscus hunteri, 46
Damaliscus jimela, 44
Damaliscus koba, 40
Damaliscus korrigum, 39, 40
Damaliscus korrigum jimela, 44,
Damaliscus korrigum jonesi, 44 45
Damaliscus korrigum korrigum, 41
Damaliscus korrigum phalius, 46
Damaliscus korrigum selousi, 44
Damaliscus korrigum tiang, 42, 43

Damaliscus lunatus, 37
Damaliscus phalius, 46
Damaliscus pygarga, 34
Damaliscus pygargus, 33, 34
Damaliscus tiang, 42
damarensis, Madoqua, 184
damarensis, Madoqua damarensis, 184
damarensis, Madoqua (Rhynchotragus), 184
damarensis, Nanotragus, 184
damarensis, Neotragus, 184
damarensis, Rhynchotragus, 184
damarensis variani, Madoqua, 185
damarensis variani, Rhynchotragus, 185
Defassa, 233, 238
defassa albertensis, Kobus, 238
defassa angusticeps, Kobus, 237
defassa annectens, Kobus, 236
defassa, Antilope, 232, 242
defassa avellanifrons, Kobus, 237
defassa breviceps, Kobus, 238
defassa, Cervicapra, 232
defassa, Cobus, 232
defassa, Cobus unctuosus, 238
defassa cottoni, Kobus, 238
defassa crawshayi, Cobus, 244
defassa crawshayi, Kobus, 244
defassa dianæ, Kobus, 238
defassa fulvifrons, Kobus, 237
defassa griseotinctus, Kobus, 238
defassa harnieri, Cobus, 234
defassa harnieri, Kobus, 234
defassa hawashensis, Kobus, 237
defassa, Kobus, 232
defassa, Kobus defassa, 238
defassa ladoensis, Kobus, 238
defassa matschiei, Cobus, 234
defassa nzoiæ, Kobus, 237
defassa penricei, Cobus, 245
defassa penricei, Kobus, 245
defassa powelli, Kobus, 237
defassa raineyi, Kobus, 237
defassa, Redunca, 232
defassa schubotzi, Kobus, 236
defassa sing-sing, Cobus, 242
defassa tjæderi, Cobus, 235
defassa tjæderi, Kobus, 235
defassa tschadensis, Kobus, 235
defassa typicus, Cobus, 238
defassa ugandæ, Cobus, 240
defassa ugandæ, Kobus, 240
defassa unctuosus, Cobus, 242
defassa unctuosus, Kobus, 241, 242
defassus, Cobus, 232
defassus, Kobus, 232
defriesi, Cephalophus nyasæ, 104
deserticola, Neotragus moschatus, 162
deserticola, Nesotragus moschatus, 162
dianæ, Kobus defassa, 238
digglei, Bubalis tora, 11
Dik-dik, 175
donaldsoni, Cervicapra redunca, 217
dorcas, Antilope, 33
Dorcatragus, 195
Dorcatragus megalotis, 196
Dorcotragus, 195
Dorcotragus megalotis, 195
doria, Antilope, 89
doria, Cephalophus, 89
doriæ, Cephalophela, 90
doriæ, Cephalophus, 89, 90
dorsalis, Antilope (Cephalophus), 80
dorsalis castaneus, Cephalophus, 81
dorsalis, Cephalophus, 80
dorsalis, Cephalops, 80
Duiker-bok, 108

Eleotragus, 203
eleotragus, Antilope, 203, 221
eleotragus, Antilope (Redunca), 204
Eleotragus arundinaceus, 204, 214, 221
(Eleotragus) arundinum, Redunca, 203
Eleotragus bohor, 214
Eleotragus capreolus, 200
eleotragus, Cerophorus (Cervicapra), 204
eleotragus, Cervicapra, 221
Eleotragus eleotragus, 205, 221
eleotragus, Eleotragus, 205, 221
Eleotragus isabellinus, 204
Eleotragus (Pelea) capreolus, 200
Eleotragus redunca, 221
eleotragus, Redunca, 204, 221
Eleotragus reduncus, 204, 211, 214
Eleotragus vardoni, 268
Eleotragus villosus, 200
ellipsiprymnus adolfi-frederici, Cobus, 235
ellipsiprymnus, Aigoceros, 226
ellipsiprymnus, Aigocerus, 226

ellipsiprymnus, Antilope, 226
ellipsiprymnus, Antilope (Œgocerus), 226
ellipsiprymnus canescens, Kobus, 229
ellipsiprymnus, Cervicapra, 227
ellipsiprymnus, Cobus, 227
ellipsiprymnus, Heleotragus, 227
ellipsiprymnus, Kobus, 226, 227
ellipsiprymnus, Kolus, 226
ellipsiprymnus kondensis, Kobus, 229
ellipsiprymnus kulu, Kobus, 229
ellipsiprymnus kuru, Kobus, 230
ellipsiprymnus lipuwa, Kobus, 229
ellipsiprymnus pallidus, Kobus, 228
ellipsiprymnus thikæ, Kobus, 228
elypsiprymnus, Antilope, 227
emini, Cephalophus, 83
erlangeri, Madoqua, 182
erlangeri, Rhynchotragus, 182

fasciatus, Gorgon, 54
flavescens, Cephalophus grimmi, 112
flavescens, Cephalophus grimmia, 112
forfex, Antilope, 253
frederici, Antilope, 94
frederici, Cephalophus, 94
frederici, Sylvicapra, 94
frommi, Kobus penricei, 245
fulvifrons, Kobus defassa, 237
fulvo-rufescens, Antilope, 147
fulvorufula, Antilope, 220
fulvorufula, Cervicapra, 221
fulvorufula chanleri, Cervicapra, 223
fulvorufula chanleri, Redunca, 223
fulvorufula, Oreodorcas, 221
fulvorufula, Redunca, 220
fulvorufula, Redunca fulvorufula, 222
fulvorufula shoana, Cervicapra, 224
fulvorufula shoana, Redunca, 224
fulvorufula subalpina, Cervicapra, 221

gallarum, Ourebia, 144
Gazella albifrons, 35
(Gazella) capreolus, Antilope, 199
(Gazella) grimmia, Antilope, 114
(Gazella) kob, Cerophorus, 253
(Gazella) oreotragus, Antilope, 124
Gazella pygarga, 33
(Gazella) pygarga, Cerophorus, 33
(Gazella) pygmæa, Antilope, 169
gnou, Antilope, 51
gnou, Bos, 50
Gnu, 52
gnu, Antilope, 50
gnu, Antilope (Boselaphus), 51
gnu, Bos, 51
gnu, Bubalus, 52
gnu, Catoblepas, 51
gnu, Cemas, 51
gnu, Cerophorus (Boselaphus), 51
gnu, Connochætes, 50, 51
Gorgon, 48
Gorgon albojubatus, 58
gorgon, Antilope, 54
gorgon, Catoblepas, 54
gorgon, Connochætes, 54
Gorgon fasciatus, 54
Gorgon taurinus, 55
Gorgon taurius, 55
goslingi, Oribia, 143
goslingi, Ourebia, 143
grayi, Pediotragus tragulus, 147
grimmi abyssinicus, Cephalophus, 117
grimmi altifrons, Cephalophus, 113
grimmi altivallis, Cephalophus, 120
grimmi altivallis, Sylvicapra, 120
grimmi campbelliæ, Cephalophus, 116
grimmi, Cephalophus, 108
grimmi, Cephalophus grimmi, 110
grimmi, Cephalophus (Sylvicapra), 107
grimmi coronatus, Cephalophus, 114
grimmi flavescens, Cephalophus, 112
grimmi hindei, Cephalophus, 119
grimmi nyansæ, Cephalophus, 118
grimmi roosevelti, Cephalophus, 121
grimmi roosevelti, Sylvicapra, 121
grimmi shirensis, Cephalophus, 120
grimmi splendidulus, Cephalophus, 114

grimmi, Sylvicapra, 108
Grimmia, 63
grimmia, Antilope, 114
grimmia, Antilope (Gazella), 114
grimmia, Antilope (Grimmia), 86
Grimmia burchelli, 108
Grimmia campbelliæ, 116
grimmia, Capra, 107, 146
grimmia, Cephalophus, 86, 108, 114
grimmia, Cerophorus (Cervicapra), 114
grimmia flavescens, Cephalophus, 112
Grimmia grimmia, 115
grimmia, Grimmia, 115
(Grimmia) grimmia, Antilope, 86
Grimmia irrorata, 108
Grimmia madoqua, 117
Grimmia mergens, 108
(Grimmia) mergens, Antilope, 108
grimmia, Moschus, 107
Grimmia nictitans, 108
Grimmia ocularis, 113
Grimmia splendidula, 114
grimmia, Sylvicapra, 86, 108, 115
(Grimmia) sylvicultrix, Antilope, 63
grimmius, Cephalophus, 108
grisea, Antilope, 33, 156
grisea, Cerophorus (Cervicapra), 156
griseotinctus, Kobus defassa, 238
griseus, Oreotragus, 156
Grysbock, 155
Grysbock melanotis, 157
Grysbok, 157
gubanensis, Madoqua phillipsi, 181
guentheri, Madoqua, 191
guentheri, Madoqua guentheri, 192
guentheri, Madoqua (Rhynchotragus), 191
guentheri, Rhynchotragus, 191
guentheri smithi, Madoqua, 194
guentheri smithi, Rhynchotragus, 194
guentheri wroughtoni, Madoqua, 193
guentheri wroughtoni, Rhynchotragus, 193
Guevei, 93
Guevei æquatorialis, 98
(Guevei) hecki, Cephalophus, 105
(Guevei) lugens, Cephalophus, 106
Guevei maxwelli, 94
(Guevei) maxwelli, Cephalophus, 93, 94
Guevei melanorheus, 96
(Guevei) melanorheus, Cephalophus, 96
Guevei monticola, 101
(Guevei) monticola, Cephalophus, 100
(Guevei) nyasæ, Cephalophus, 103
(Guevei) simpsoni, Cephalophus, 105
guineensis, Cervus pusillus, 169

haggardi, Neotragus, 140
haggardi, Oribia, 140
haggardi, Ourebia, 140
harnieri, Antilope, 234
harnieri, Cobus, 234
harnieri, Cobus defassa, 234
harnieri, Kobus, 234
harnieri, Kobus defassa, 234
harrarensis, Madoqua, 179
harrarensis, Madoqua phillipsi, 179
harrisoni, Hylarnus, 167
harrisoni, Neotragus, 167
harrisoni, Neotragus (Hylarnus), 167
harveyi, Cephalophus, 76
harveyi, Cephalophus harveyi, 77
harveyi keniæ, Cephalophus, 77
hastata, Antilope, 135
hastata, Calotragus, 135
hastata, Oribia, 135
hastata, Ourebia, 135
hastatus, Nanotragus, 135
hastatus, Oreotragus, 135
hastatus, Scopophorus, 135
hawashensis, Kobus defassa, 237
hecki, Cephalophus, 105
hecki, Cephalophus (Guevei), 105
hecki, Connochætes, 57
hecki, Connochætes taurinus, 57
Heleotragus ellipsiprymnus, 227
Heleotragus leche, 247
Heleotragus vardonii, 268
hemprichiana, Antilope, 174
hemprichianus, Cephalophus, 184
hemprichianus, Neotragus, 174
hemprichii, Antilope, 174
hemprichii, Madoqua, 174
hemprichii, Neotragus, 175

hemprichii, Tragelaphus, 173
Herola, 46
hindei, Cephalophus abyssinicus, 119
hindei, Cephalophus grimmi, 119
hindei, Madoqua kirki, 190
hindei, Rhynchotragus, 190
hindei, Rhynchotragus kirki, 190
horstocki natalensis, Rhaphiceros, 151
horstocki, Pediotragus, 148
horstocki, Rhaphiceros, 148
hunteri, Alcelaphus, 46
hunteri, Alcelaphus (Damalis), 46
hunteri, Beatragus, 46
hunteri, Bubalis, 46
hunteri, Cobus, 46
hunteri, Damalis, 46
hunteri, Damaliscus, 46
Hunter's hartebeest, 46
Hylarnus, 166
Hylarnus batesi, 166
(Hylarnus) batesi, Neotragus, 166
Hylarnus harrisoni, 167
(Hylarnus) harrisoni, Neotragus, 167

ibex, Antilope, 147
ignifer, Cephalophus, 75
insignis, Bubalis jacksoni, 23
insignis, Bubalis lelwel, 23
irrorata, Grimmia, 108
isabellina, Antilope, 204
isabellina, Cervicapra, 204
isabellina, Redunca, 204, 205
isabellinus, Eleotragus, 204
ituriensis, Cephalophus, 64

jacksoni, Bubalis, 21
jacksoni, Bubalis lelwel, 21
jacksoni insignis, Bubalis, 23
jentinki, Cephalophus, 66
Jentink's Duiker, 67
Jimela, 45
jimela, Damalis, 44
jimela, Damaliscus, 44
jimela, Damaliscus corrigum, 44
jimela, Damaliscus korrigum, 44, 45
jimeru, Bubalis, 44
johnstoni, Cephalophus, 75
johnstoni, Connochætes, 57
johnstoni, Connochætes taurinus, 57
(johnstoni) rufigianus, Connochætes taurinus, 57
jonesi, Damaliscus corrigum, 44
jonesi, Damaliscus korrigum, 44

keniæ, Cephalophus harveyi, 77
kenyæ, Oribia, 141
kenyæ, Ourebia, 141
kirchenpauerii, Nesotragus, 160
kirki hindei, Madoqua, 190
kirki hindei, Rhynchotragus, 190
kirki, Madoqua, 188
kirki, Madoqua kirki, 188
kirki, Madoqua (Rhynchotragus), 187, 188
kirki, Neotragus, 187
kirki nyikæ, Madoqua, 189
kirki nyikæ, Rhynchotragus, 189
kirki, Rhynchotragus, 188
kirki typica, Madoqua, 188
klippspringer, Antilope, 123
Klipspringer, 125
Kob, 254
kob, Adenota, 253, 264
kob, Adenota kob, 256
kob adolfi-friderici, Adenota, 259
kob adolfi, Kobus, 259
kob aluræ, Adenota, 260
kob aluræ, Kobus, 260
kob, Antilope, 253
kob bahr-keetæ, Adenota, 259
kob bahr-keetæ, Kobus, 259
kob, Cerophorus (Gazella), 253
kob, Cobus, 254
kob, Kobus, 264
kob, Kobus (Adenota), 253
kob, Kobus kob, 256
kob leucotis, Kobus, 266
kob loderi, Kobus, 260
kob neumanni, Adenota, 262
kob neumanni, Kobus, 262
kob nigricans, Kob, 258
kob nigroscapulatus, Kobus, 265
kob notata, Adenota, 263
kob notatus, Kobus, 263
kob thomasi, Adenota, 264
kob thomasi, Kobus, 264
kob ubangiens's, Adenota, 259
kob ubangiensis, Kobus, 259
[kob] vaughani, Adenota, 265
koba, Adenota, 254, 264
koba, Antilope, 241
koba, Bubalis, 42
koba, Damaliscus, 40
Kobus, 225, 226
Kobus adansoni, 253
Kobus (Adenota) kob, 253
Kobus (Adenota) vardoni, 268

Kobus adolfi-friderici, 235
Kobus crawshayi, 244
Kobus defassa, 232
Kobus defassa albertensis, 238
Kobus defassa angusticeps, 237
Kobus defassa annectens, 236
Kobus defassa avellanifrons, 237
Kobus defassa breviceps, 238
Kobus defassa cottoni, 238
Kobus defassa crawshayi, 244
Kobus defassa defassa, 238
Kobus defassa dianæ, 238
Kobus defassa fulvifrons, 237
Kobus defassa griseotinctus, 238
Kobus defassa harnieri, 234
Kobus defassa hawashensis, 237
Kobus defassa ladoensis, 238
Kobus defassa nzoiæ, 237
Kobus defassa penricei, 245
Kobus defassa powelli, 237
Kobus defassa raineyi, 237
Kobus defassa schubotzi, 236
Kobus defassa tjæderi, 235
Kobus defassa tschadensis, 233
Kobus defassa ugandæ, 240
Kobus defassa unctuosus, 241, 242
Kobus defassus, 232
Kobus ellipsiprymnus, 226
Kobus ellipsiprymnus canescens, 229
Kobus ellipsiprymnus kondens's, 229
Kobus ellipsiprymnus kulu, 229
Kobus ellipsiprymnus kuru, 230
Kobus ellipsiprymnus lipuwa, 229
Kobus ellipsiprymnus pallidus, 228
Kobus ellipsiprymnus thikæ, 228
Kobus harnieri, 234
Kobus kob, 264
Kobus kob adolfi, 259
Kobus kob aluræ, 260
Kobus kob bahr-keetæ, 259
Kobus kob kob, 256
Kobus kob leucotis, 266
Kobus kob loderi, 260
Kobus kob neummanni, 262
Kobus kob nigricans, 258
Kobus kob nigroscapulatus, 265
Kobus kob notatus, 263
Kobus kob thomasi, 264
Kobus kob ubangiensis, 259
Kobus leche, 246
Kobus lechee, 247
Kobus leucotis, 264, 266
Kobus maria, 251
Kobus mariæ, 251
Kobus megaceros, 251
Kobus (Onotragus) leche, 246
Kobus (Onotragus) maria, 251
Kobus (Onotragus) robertsi, 249
Kobus (Onotragus) smithemani, 249
Kobus penricei, 245
Kobus penricei frommi, 245
Kobus penricei muenzneri, 245
Kobus sing-sing, 232, 234, 241
Kobus unctuosa, 242
Kobus unctuosa uwendensis, 238
Kobus unctuosus matschiei, 234
Kobus unctuosus tschadensis, 235
Kobus unctuosus ugandæ, 240
Kobus vardoni, 268
Kobus vardoni senganus, 269
Kobus vardoni vardoni, 269
Kobus vaughani, 265
Kolus, 225
Kolus ellipsiprymnus, 226
Kolus sing-sing, 241
kondensis, Kobus ellipsiprymnus, 229
Kongoni, 13
kongoni, Bubalis cokei, 17
Korrigum, 40, 41
korrigum, Damaliscus, 39, 43
korrigum, Damaliscus korrigum, 41
korrigum jimela, Damaliscus, 44, 45
korrigum jonesi, Damaliscus, 44
korrigum phalius, Damaliscus, 46
korrigum selousi, Damaliscus, 44
korrigum tiang, Damaliscus, 42, 43
kul, Adenota, 267
kulu, Kobus ellipsiprymnus, 229
kuru, Kobus ellipsiprymnus, 230

ladoensis, Kobus defassa, 238
lalandia, Antilope, 220
lalandii, Antilope, 221
lalandii, Cervicapra, 221
lalandii, Redunca, 221
lanata, Antilope, 200
landiana, Antilope, 220
langi, Madoqua, 185
Leche, 247
leche, Adenota, 246
leche, Cobus, 247
leche, Heleotragus, 247
leche, Kobus, 247
leche, Kobus (Onotragus), 246

lechee, Adenota, 247, 266
lechee, Cobus, 247
lechee, Kobus, 247
lechee, Onotragus, 247
lechi, Cobus, 247
Lechwe, 247
lechwe, Cobus, 247
leechi, Cobus, 247
Lelwel, 19
lelwel, Acronotus, 19
lelwel, Bubalis, 19, 21
lelwel, Bubalis lelwel, 20
lelwel insignis, Bubalis, 23
lelwel jacksoni, Bubalis, 21
lelwel niediecki, Bubalis, 23
lelwel roosevelti, Bubalis, 24
lelwel tschadensis, Bubalis, 20
lelwel typica, Bubalis, 20
leopoldi, Cephalophus, 78
leucochilus, Cephalophus, 82
leucogaster, Cephalophus, 79
leucoprosopus, Cephalophus, 121
leucoprosopus, Cephalophus (Sylvicapra), 121
leucoprosopus, Sylvicapra, 121
leucoprymnus, Bubalis, 29
leucotis, Adenota, 266
leucotis, Antilope, 266
leucotis, Cervicapra, 267
leucotis, Cobus, 267
leucotis, Cobus (Adenota), 267
leucotis, Kobus, 264, 266
leucotis, Kobus kob, 266
Lichi, 247
lichtensteini, Alcelaphus, 29
lichtensteini, Antilope, 29
lichtensteini, Boselaphus, 29
lichtensteini, Bubalis, 29
lichtensteini, Sigmoceros, 29
lipuwa, Kobus ellipsiprymnus, 229
livingstonei, Nesotragus, 162
livingstonianus, Nanotragus, 162
livingstonianus, Neotragus, 162
livingstonianus, Neotragus livingstonianus, 163
livingstonianus, Neotragus (Nesotragus), 162
livingstonianus, Nesotragus, 162
livingstonianus typicus, Nesotragus, 163
livingstonianus zuluensis, Neotragus, 164
livingstonianus zuluensis, Nesotragus, 164
loderi, Cobus, 260
loderi, Cobus vardoni, 260
loderi, Kobus kob, 260
longiceps, Antilope (Terpone), 66
longiceps, Cephalophus, 64
longiceps, Terpone, 64, 66
lugens, Cephalophus, 106
lugens, Cephalophus (Guevei), 106
lunata, Antilope, 37
lunata, Damalis, 37
lunatus, Acronotus, 37
lunatus, Alcelaphus, 37
lunatus, Bubalis, 37
lunatus, Bubalus, 37, 42
lunatus, Damaliscus, 37

maculata, Antilope, 33
madoka, Antilope, 174
madoka, Antilope (Neotragus), 174
Madoqua, 172, 173
madoqua, Antilope, 117, 175
Madoqua cavendishi, 185
Madoqua cavendishi cavendishi, 186
Madoqua cavendishi minor, 187
madoqua, Cephalophus, 117
Modoqua cordeauxi, 182
Madoqua damarensis, 184
Madoqua damarensis damarensis, 184
Madoqua damarensis variani, 185
Madoqua erlangeri, 182
madoqua, Grimmia, 117
Madoqua guentheri, 191
Madoqua guentheri guentheri, 192
Madoqua guentheri smithi, 194
Madoqua guentheri wroughtoni, 193
Madoqua harrarensis, 179
Madoqua hemprichii, 174
Madoqua kirki, 188
Madoqua kirki hindei, 190
Madoqua kirki kirki, 188
Madoqua kirki nyikæ, 189
Madoqua kirki typica, 188
Madoqua langi, 185
Madoqua phillipsi, 177, 178
Madoqua phillipsi gubanensis, 181
Madoqua phillipsi harrarensis, 179
Madoqua phillipsi phillipsi, 178
Madoqua piacentinii, 177
Madoqua (Rhynchotragus) cavendishi, 185

Madoqua (Rhynchotragus) damarensis, 184
Madoqua (Rhynchotragus) guentheri, 191
Madoqua (Rhynchotragus) kirki, 187, 188
Madoqua (Rhynchotragus) nasoguttata, 194
Madoqua (Rhynchotragus) nasoguttatus, 194
Madoqua (Rhynchotragus) thomasi, 191
Madoqua saltiana, 174
Madoqua swaynei, 176
madoqua, Sylvicapra, 117
madoqua, Tragelaphus, 117
major, Boselaphus, 6
major, Bubalis, 6
maria, Cobus, 251
maria, Kobus, 251
maria, Kobus (Onotragus), 251
mariæ, Cobus, 251
mariæ, Kobus, 251
matschiei, Cobus defassa, 234
matschiei, Kobus unctuosus, 234
mauretanica, Bubalis, 5
mauritanicus, Bubalus, 5
maxwelli, Antilope, 94
maxwelli, Antilope (Cephalolophus), 94
maxwelli, Antilope (Cephalophus), 93, 94
maxwelli, Cephalophus, 93
maxwelli, Cephalophus (Guevei), 93, 94
maxwelli, Guevei, 94
megaceros, Adenota, 251
megaceros, Kobus, 251
megaceros, Onotragus, 251
megalotis, Dorcatragus, 196
megalotis, Dorcotragus, 195
megalotis, Oreotragus, 195
melanoprymnus, Cephalophus, 64
melanoprymnus, Potamotragus, 64
melanorheneus, Cephalophus, 96
melanorheus æquatorialis, Cephalophus, 98
melanorheus anchietæ, Cephalophus, 98
melanorheus, Antilope (Cephalophus), 96
melanorheus, Cephalophus (Guevei), 96
melanorheus, Cephalophus melanorheus, 97
melanorheus, Guevei, 96
melanorheus musculoides, Cephalophus, 99
melanorheus sundevalli, Cephalophus, 97
melanorheus typicus, Cephalophus, 97
melanotis, Antilope, 155
melanotis, Antilope tragulus, 156
melanotis, Calotragus, 156
melanotis, Grysbock, 157
melanotis, Nanotragus, 156
melanotis, Neotragus, 156
melanotis, Nototragus, 157
melanotis pallida, Calotragus, 157
melanotis, Raphiceros (Nototragus), 155
melanotis, Raphicerus, 156
melanotis, Rhaphiceros, 156
melanotis, Tragelaphus, 156
melanotis, Tragulus, 156
melanura, Antilope, 133
melanura, Cemas, 133
mergens, Antilope, 107
mergens, Antilope (Grimmia), 108
mergens, Cephalophus, 107
mergens, Grimmia, 108
mergens, Sylvicapra, 108
mergens, Tragelaphus, 108
microdon, Oribia, 142
microdon, Ourebia, 142
minor, Madoqua cavendishi, 187
minor, Rhynchotragus cavendishi, 187
minuta, Antilope, 101
Minytragus, 158
montana æquatoria, Ourebia, 140
montana, Antilope, 138
montana, Oribia, 138
montana, Ourebia, 138
montana, Ourebia montana, 139
montana, Redunca, 138
montanus, Calotragus, 138
montanus, Nanotragus, 138
montanus, Scopophorus, 137, 138
montanus, Tragelaphus, 138
monticola, Antilope, 100
monticola, Capra, 100
monticola, Cephalophus, 101
monticola, Cephalophus (Guevei), 100
monticola, Guevei, 101
moschata, Antilope, 160
moschatus akeleyi, Neotragus, 161
moschatus akeleyi, Nesotragus, 161

moschatus deserticola, Neotragus, 162
moschatus deserticola, Nesotragus, 162
moschatus, Nanotragus, 160
moschatus, Neotragus, 160
moschatus, Neotragus moschatus, 160
moschatus, Neotragus (Nesotragus), 159
moschatus, Nesotragus, 159
Moschus grimmia, 107
Moschus pygmæus, 169
muenzneri, Kobus penricei, 245
multiannulata, Redunca, 205
musculoides, Cephalophus melanorheus, 99

Nagor, 202, 212, 213
nagor, Redunca, 211
(Nagor) redunca, Antilope, 211
nakuræ, Bubalis, 16
nakuræ, Bubalis cokei, 16
Nanotragus, 158
Nanotragus campestris, 148
Nanotragus damarensis, 184
Nanotragus hastatus, 135
Nanotragus livingstonianus, 162
Nanotragus melanotis, 156
Nanotragus montanus, 138
Nanotragus moschatus, 160
Nanotragus nigricaudatus, 137
Nanotragus oreotragus, 124
Nanotragus perpusillus, 170
Nanotragus regius, 170
Nanotragus scoparius, 133
Nanotragus spiniger, 169
Nanotragus tragulus, 148
nasoguttata, Madoqua (Rhynchotragus), 194
nasoguttatus, Madoqua (Rhynchotragus), 194
nasoguttatus, Rhynchotragus, 194
Natal Duiker, 68
natalensis amœnus, Cephalophus, 69
natalensis, Antilope (Cephalolophus), 68
natalensis bradshawi, Cephalophus, 71
natalensis, Cephalophorus, 68
natalensis, Cephalophus, 68
natalensis, Cephalophus natalensis, 69
natalensis, Raphicerus campestris, 151
natalensis, Rhaphiceros horstocki, 151
natalensis robertsi, Cephalophus, 70
natalensis, Sylvicapra, 68
Neotragus, 158, 168, 172
Neotragus batesi, 166
Neotragus campestris, 148
Neotragus damarensis, 184
Neotragus haggardi, 140
Neotragus harrisoni, 167
Neotragus hemprichianus, 174
Neotragus hemprichii, 175
Neotragus (Hylarnus) batesi, 166
Neotragus (Hylarnus) harrisoni, 167
Neotragus kirki, 187
Neotragus livingstonianus, 162
Neotragus livingstonianus livingstonianus, 163
Neotragus livingstonianus zuluensis, 164
(Neotragus) madoka, Antilope, 174
Neotragus melanotis, 156
Neotragus moschatus, 160
Neotragus moschatus akeleyi, 161
Neotragus moschatus deserticola, 162
Neotragus moschatus moschatus, 160
Neotragus (Nesotragus) livingstonianus, 162
Neotragus (Nesotragus) moschatus, 159
Neotragus nigricaudatus, 137
Neotragus pygmæa, 169
(Neotragus) pygmæa, Antilope, 169
Neotragus pygmæus, 169, 170
(Neotragus) saltiana, Antilope, 174
Neotragus saltianus, 174
Neotragus scoparius, 134
Neotragus tragulus, 148
Nesotragus, 159
Nesotragus kirchenpaueri, 160
Nesotragus livingstonei, 162
Nesotragus livingstonianus, 162
(Nesotragus) livingstonianus, Neotragus, 162
Nesotragus livingstonianus typicus, 163
Nesotragus livingstonianus zuluensis, 164
Nesotragus moschatus, 159

Nesotragus moschatus akeleyi, 161
Nesotragus moschatus deserticola, 162
(Nesotragus) moschatus, Neotragus, 159
Nesotragus saltianus, 175
Nesotragus zuluensis, 164
neumanni, Adenota kob, 262
neumanni, Bubalis, 18
neumanni, Bubalis tora, 18
neumanni capricornis, Raphicerus, 153
neumanni, Kobus kob, 262
neumanni, Nototragus, 151
neumanni, Pediotragus, 151
neumanni, Raphicerus, 151
neumanni, Raphicerus campestris, 151
neumanni, Rhaphiceros campestris, 151
neumanni stigmaticus, Rhaphiceros, 152
nictitans, Antilope, 107
nictitans, Grimmia, 108
niediecki, Bubalis, 23
niediecki, Bubalis lelwel, 23
niger, Cephalophus, 91
nigeriensis, Cervicapra bohor, 219
nigeriensis, Redunca redunca, 219
nigricans, Cobus, 258
nigricans, Kobus kob, 258
nigricaudata, Oribia, 137
nigricaudata, Ourebia, 137
nigricaudatus, Nanotragus, 137
nigricaudatus, Neotragus, 137
nigrifrons, Cephalophus, 72
nigroscapulata, Adenota, 265
nigroscapulatus, Cobus, 265
nigroscapulatus, Cobus coba, 265
nigroscapulatus, Kobus kob, 265
nigrum, Cephalopidium, 91
noacki, Bubalis, 13
noacki, Bubalis tora, 13
notata, Adenota kob, 263
notatus, Kobus kob, 263
Nototragus, 155
Nototragus melanotis, 157
(Nototragus) melanotis, Raphiceros, 155
Nototragus neumanni, 151
nyansæ, Cephalophus grimmi, 118
nyansæ, Sylvicapra abyssinica, 118
nyasæ, Cephalophus, 103
nyasæ, Cephalophus (Guevei), 103
nyasæ, Cephalophus nyasæ, 103
nyasæ congicus, Cephalophus, 104
nyasæ defriesi, Cephalophus, 104
nyikæ, Madoqua kirki, 189
nyikæ, Rhynchotragus kirki, 189
nzoiæ, Kobus defassa, 237

occidentalis, Cervicapra arundineum, 210
occidentalis, Redunca arundinum, 210
ocularis, Antilope, 113
ocularis, Cephalophus, 113
ocularis, Grimmia, 113
ocularis, Sylvicapra, 113
(Œgocerus) ellipsiprymnus, Antilope, 226
ogilbyi, Antilope, 83
ogilbyi, Antilope (Cephalophus), 83
ogilbyi, Antilope (Tragelaphus), 83
ogilbyi, Cephalophia, 83
ogilbyi, Cephalophorus, 83
ogilbyi, Cephalophus, 83, 84
ogilbyi, Sylvicapra, 83
oleotragus, Antilope, 204
onctuosus, Cobus, 242
Onotragus, 246
(Onotragus) leche, Kobus, 246
Onotragus lechee, 247
(Onotragus) maria, Kobus, 251
Onotragus megaceros, 251
(Onotragus) robertsi, Kobus, 249
(Onotragus) smithemani, Kobus, 249
operculatus, Catoblepas, 51
Oreodorcas, 202
Oreodorcas fulvorufula, 241
Oreotragus, 123
Oreotragus aceratos, 130
oreotragus aceratos, Oreotragus, 130
oreotragus, Antilope, 123, 204
oreotragus, Antilope (Gazella), 124
oreotragus, Antilope (Ourebia), 124
oreotragus, Antilope (Tragulus), 124
oreotragus aureus, Oreotragus, 127
oreotragus, Calotragus, 124
oreotragus, Cemas, 124
oreotragus, Cerophorus (Cervicapra), 124
Oreotragus griseus, 156

Oreotragus hastatus, 135
Oreotragus megalotis, 195
oreotragus, Nanotragus, 124
Oreotragus oreotragus, 123, 124, 126
oreotragus, Oreotragus, 123, 124, 126
Oreotragus oreotragus aceratos, 130
Oreotragus oreotragus aureus, 127
Oreotragus oreotragus oreotragus, 126
oreotragus, Oreotragus oreotragus, 126
Oreotragus oreotragus porteousi, 130
Oreotragus oreotragus saltatrixoides, 126
Oreotragus oreotragus schillingsi, 127
Oreotragus oreotragus somalicus, 128
oreotragus porteousi, Oreotragus, 130
Oreotragus saltator, 124
Oreotragus saltator aceratos, 130
Oreotragus saltator porteusi, 130
Oreotragus saltator saltatrixoides, 126
Oreotragus saltator schillingsi, 127
Oreotragus saltator somalicus, 128
Oreotragus saltator typicus, 126
Oreotragus saltatrix, 124
Oreotragus saltatrixoides, 126
oreotragus saltatrixoides, Oreotragus, 126
Oreotragus schillingsi, 127
oreotragus schillingsi, Oreotragus, 127
Oreotragus scoparius, 133
Oreotragus somalicus, 128
oreotragus somalicus, Oreotragus, 128
oreotragus, Tragelaphus, 124
Oreotragus tragulus, 147
Oreotragus typicus, 124
Oribi, 134
oribi, Ourebia, 134
Oribia, 132
Oribia cottoni, 144
Oribia goslingi, 143
Oribia haggardi, 140
Oribia hastata, 135
Oribia kenyæ, 141
Oribia microdon, 142
Oribia montana, 138
Oribia nigricaudata, 137
Oribia scoparia, 134
Oritragus, 123
ourebi, Antilope, 133
ourebi, Ourebia, 133, 134
ourebi, Scopophorus, 133
Ourebia, 132
Ourebia cottoni, 144
Ourebia gallarum, 144
Ourebia goslingi, 143
Ourebia haggardi, 140
Ourebia hastata, 135
Ourebia kenyæ, 141
Ourebia microdon, 142
Ourebia montana, 138
Ourebia montana æquatoria, 140
Ourebia montana montana, 139
Ourebia nigricaudata, 137
(Ourebia) oreotragus, Antilope, 124
Ourebia oribi, 134
Ourebia ourebi, 133, 134
(Ourebia) saltiana, Cephalophus, 175
Ourebia scoparia, 134
(Ourebia) scoparia, Antilope, 133
oureby, Calotragus, 133

pallida, Antilope, 157
pallida, Antilope tragulus, 157
pallida, Calotragus melanotis, 157
pallidus, Kobus ellipsiprymnus, 228
Pediotragus, 146
pediotragus, Antilope, 157
Pediotragus campestris, 148
Pediotragus horstocki, 148
Pediotragus neumanni, 151
Pediotragus rufescens, 157
Pediotragus tragulus, 147
pediotragus, Tragulus, 157
Pediotragus tragulus grayi, 147
Pelea, 199
Pelea capreolus, 109, 200
(Pelea) capreolus, Eleotragus, 200
penricei, Cobus, 245
penricei, Cobus defassa, 245
penricei frommi, Kobus, 245
penricei, Kobus, 245
penricei, Kobus defassa, 245
penricei muenzneri, Kobus, 245
perpusilla, Antilope, 170
perpusilla, Antilope (Cephalophus), 101

perpusillus, Nanotragus, 170
personata, Antilope, 33
perspisilla, Antilope, 101
phalius, Damaliscus, 46
phalius, Damaliscus corrigum, 46
phalius, Damaliscus korrigum, 46
philantomba, Antilope (Cephalophus), 93
philantomba, Cephalophus, 93
philantomba, Sylvicapra, 94
phillipsi gubanensis, Madoqua, 181
phillipsi harrarensis, Madoqua, 179
phillipsi, Madoqua, 177, 178
phillipsi, Madoqua phillipsi, 178
piacentinii, Madoqua, 177
platous, Antilope (Cephalophus), 107
platous, Cephalophus, 107
platyotus, Antilope (Cephalophus), 108
pluto, Antilope, 91
Poku, 268
Pookoo, 268
porteousi, Oreotragus oreotragus, 130
porteusi, Oreotragus saltator, 130
Potamotragus, 63
Potamotragus melanoprymnus, 64
pousarguesi, Adenota, 260
pousarguesi, Cobus coba, 260
powelli, Kobus defassa, 237
ptoox, Cephalophus, 107
ptox, Antilope, 108
Puku, 268
punctulatus, Cephalophus, 64, 94
pusillus guineensis, Cervus, 169
pygarga, Antilope, 33
pygarga, Bubalis, 34
pygarga, Cerophorus (Gazella), 33
pygarga, Damalis, 33
pygarga, Damaliscus, 34
pygarga, Gazella, 33
pygargus, Alcelaphus, 34
pygargus, Cervus, 33
pygargus, Damaliscus, 33, 34
pygmæa, Antilope, 100, 169
pygmæa, Antilope (Gazella), 169
pygmæa, Antilope (Neotragus), 169
pygmæa, Capra, 169
pygmæa, Cemas, 169
pygmæa, Cerophorus (Cervicapra), 169
pygmæa, Neotragus, 169
pygmæa, Sylvicapra, 101
pygmæus caffer, Cephalophus, 101
pygmæus, Cephalophus, 101, 169
pygmæus, Moschus, 169
pygmæus, Neotragus, 169, 170
pygmæus sundevalli, Cephalophus, 97
pygmæus, Tragulus, 101, 169

rahatensis, Bubalis tora, 11
raineyi, Kobus defassa, 237
Raphiceros, 146
Raphiceros (Nototragus) melanotis, 155
Raphiceros sharpei, 153
Raphicerus, 145, 146
(Raphicerus) acuticornis, Antilope, 147
Raphicerus campestris, 146, 148
Raphicerus campestris campestris, 149
Raphicerus campestris capricornis, 153
Raphicerus campestris natalensis, 151
Raphicerus campestris neumanni, 151
Raphicerus campestris stigmaticus, 152
Raphicerus melanotis, 156
Raphicerus neumanni, 151
Raphicerus neumanni capricornis, 153
Raphicerus sharpei, 153
Raphicerus sharpei colonicus, 155
Raphicerus sharpei sharpei, 154
(Raphicerus) subulata, Antilope, 147
Redunca, 202, 210
redunca, Antilope, 211, 214
redunca, Antilope (Nagor), 211
redunca, Antilope (Redunca), 211
Redunca arundinum, 205
Redunca arundinum arundinum, 206
Redunca arundinum occidentalis, 210
Redunca bohor, 214
(Redunca) bohor, Antilope, 214
redunca bohor, Cervicapra, 214
redunca bohor, Redunca, 214
Redunca capreolus, 200
redunca, Cerophorus (Cervicapra), 211
redunca, Cervicapra, 211, 221
redunca, Cervicapra redunca, 213

Redunca chanleri, 223
redunca cottoni, Cervicapra, 217
redunca cottoni, Redunca, 217
Redunca defassa, 232
redunca donaldsoni, Cervicapra, 217
Redunca eleotragus, 204, 221
redunca, Eleotragus, 221
(Redunca) eleotrogus, Antilope, 204
Redunca (Eleotragus) arundinum, 203
Redunca fulvorufula, 220, 221.
Redunca fulvorufula chanleri, 223
Redunca fulvorufula fulvorufula, 222
Redunca fulvorufula shoana, 224
Redunca isabellina, 204, 205
Redunca lalandii, 221
Redunca montana, 138
Redunca multiannulata, 205
Redunca nagor, 211
redunca nigeriensis, Redunca, 219
Redunca redunca, 211, 212
redunca, Redunca, 211, 212
(Redunca) redunca, Antilope, 211
Redunca redunca bohor, 214
Redunca redunca cottoni, 217
Redunca redunca nigeriensis, 219
Redunca redunca redunca, 213
redunca, Redunca redunca, 213
Redunca redunca tohi, 217
Redunca redunca ugandæ, 220
Redunca redunca wardi, 215
Redunca scoparia, 133
Redunca thomasinæ, 205
redunca tohi, Redunca, 217
redunca typica, Cervicapra, 213, 219
redunca ugandæ, Redunca, 220
(Redunca) villosa, Antilope, 200
redunca wardi, Cervicapra, 215
redunca wardi, Redunca, 215
reduncus, Eleotragus, 204, 211, 214
Reedbuck, 205
regia, Antilope, 169
regius, Nanotragus, 170
reichei, Catoblepas, 55
reversa, Antilope, 211
Rhaphiceros, 146
Rhaphiceros campestris, 148
Rhaphiceros campestris capricornis, 153
Rhaphiceros campestris neumanni, 151
Rhaphiceros campestris typicus, 149
Rhaphiceros horstocki, 148
Rhaphiceros horstocki natalensis, 151
Rhaphiceros melanotis, 156
Rhaphiceros neumanni stigmaticus, 152
Rhaphiceros sharpei, 153
Rhaphiceros sharpei colonicus, 155
Rhaphicerus campestris, 148
Rhaphocerus, 145
Rhynchotragus, 183
Rhynchotragus cavendishi, 185
(Rhynchotragus) cavendishi, Madoqua, 185
Rhynchotragus cavendishi minor, 187
Rhynchotragus cordeauxi, 182
Rhynchotragus damarensis, 184
(Rhynchotragus) damarensis, Madoqua, 184
Rhynchotragus damarensis variani, 185
Rhynchotragus erlangeri, 182
Rhynchotragus guentheri, 191
(Rhynchotragus) guentheri, Madoqua, 191
Rhynchotragus guentheri smithi, 194
Rhynchotragus guentheri wroughtoni, 193
Rhynchotragus hindei, 190
Rhynchotragus kirki, 188
Rhynchotragus kirki hindei, 190
(Rhynchotragus) kirki, Madoqua, 187, 188
Rhynchotragus kirki nyikæ, 189
(Rhynchotragus) nasoguttata, Madoqua, 194
Rhynchotragus nasoguttatus, 194
(Rhynchotragus) nasoguttatus, Madoqua, 194
Rhynchotragus thomasi, 191
(Rhynchotragus) thomasi, Madoqua, 191
Rietbok, 205
robertsi, Cephalophus, 70, 78
robertsi, Cephalophus natalensis, 70
robertsi, Cobus, 249
robertsi, Kobus (Onotragus), 249
Robus, 225
Rooi Hartebeest, 25
Rooi Rhebok, 221

roosevelti, Bubalis lelwel, 24
roosevelti, Cephalophus grimmi, 121
roosevelti, Sylvicapra grimmi, 121
rothschildi, Bubalis, 16
rothschildi, Bubalis cokei, 16
Royal Antelope, 170
rubidior, Cephalophus rufilatus, 89
rubidus, Cephalophus, 73
rubro-albescens, Antilope, 156
rufa, Antilope, 211
rufescens, Antilope, 157
rufescens, Calotragus, 157
rufescens, Pediotragus, 157
ruficrista, Cephalophus, 64
rufigianus, Connochætes taurinus, (johnstoni), 57
rufilatus, Antilope (Cephalolophus), 87
rufilatus, Cephalophus, 86
rufilatus, Cephalophus rufilatus, 87
rufilatus cuvieri, Cephalophus, 87
rufilatus rubidior, Cephalophus, 87
rupestris, Antilope, 147
rupestris, Antilope tragulus, 147
rupestris, Tragulus, 147

saltator aceratos, Oreotragus, 130
saltator, Oreotragus, 124
saltator porteusi, Oreotragus, 130
saltator saltatrixoides, Oreotragus, 126
saltator schillingsi, Oreotragus, 127
saltator somalicus, Oreotragus, 128
saltator typicus, Oreotragus, 126
saltatrix, Antilope, 123
saltatrix, Calotragus, 124
saltatrix, Oreotragus, 124
saltatrixoides, Antilope, 124
saltatrixoides, Calotragus, 126
saltatrixoides, Oreotragus, 126
saltatrixoides, Oreotragus oreotragus, 126
saltatrixoides, Oreotragus saltator, 126
saltiana, Antilope, 174
saltiana, Antilope (Neotragus), 174
saltiana, Cephalophus (Ourebia), 175
saltiana, Cerophorus (Cervicapra), 174
saltiana, Madoqua, 174
saltianus, Calotragus, 175
saltianus, Neotragus, 174
saltianus, Nesotragus, 175
Sassaby, 38
schillingsi, Oreotragus, 127
schillingsi, Oreotragus oreotragus, 127
schillingsi, Oreotragus saltator, 127
schubotzi, Kobus defassa, 236
sclateri, Cephalophus, 64
scoparia, Antilope, 133
scoparia, Antilope (Ourebia), 133
scoparia, Oribia, 134
scoparia, Ourebia, 134
scoparia, Redunca, 133
scoparius, Calotragus, 133
scoparius, Nanotragus, 133
scoparius, Neotragus, 134
scoparius, Oreotragus, 133
scoparius, Scopophorus, 134
Scopophorus, 132
Scopophorus hastatus, 135
Scopophorus montanus, 137, 138
Scopophorus ourebi, 133
Scopophorus scoparius, 134
scripta, Capra, 33
selbornei, Bubalis caama, 27
selousi, Damaliscus corrigum, 44
selousi, Damaliscus korrigum, 44
senegalensis, Antilope, 39, 242
senegalensis, Damalis, 39, 42, 44
senganus, Cobus, 269
senganus, Cobus vardoni, 269
senganus, Kobus vardoni, 269
sharpei colonicus, Raphicerus, 155
sharpei colonicus, Rhaphiceros, 155
sharpei, Raphiceros, 153
sharpei, Raphicerus, 153
sharpei, Raphicerus sharpei, 154
sharpei, Rhaphiceros, 153
shirensis, Cephalophus abyssinicus, 120
shirensis, Cephalophus grimmi, 120
shoana, Cervicapra fulvorufula, 224
shoana, Redunca fulvorufula, 224
Sig, 12
Sigmoceros, 3
Sigmoceros lichtensteini, 29
silvicultrix, Antilope, 63

simpsoni, Cephalophus, 105
simpsoni, Cephalophus (Guevei), 105
Sing-sing, 233, 242
sing-sing, Adenota, 242
sing-sing, Antilope, 241
sing-sing, Cervus, 241
sing-sing, Cobus, 242
sing-sing, Cobus defassa, 242
sing-sing, Kobus, 232, 234, 241
smithemani, Cobus, 249
smithemani, Kobus (Onotragus), 249
smithemanni, Cobus, 249
smithi, Madoqua guentheri, 194
smithi, Rhynchotragus guentheri, 194
somalicus, Oreotragus, 128
somalicus, Oreotragus oreotragus, 128
somalicus, Oreotragus saltator, 128
spadix, Cephalophus, 67
spiniger, Antilope (Spinigera), 169
spiniger, Calotragus, 170
spiniger, Cephalophus, 170
spiniger, Nanotragus, 169
Spinigera, 158
spinigera, Antilope, 169
(Spinigera) spiniger, Antilope, 169
splendidula, Grimmia, 114
splendidulus, Cephalophus grimmi, 114
Steinbok, 148
stenbock, Cerophorus (Cervicapra), 147
stigmaticus, Raphiceros campestris, 152
stigmaticus, Raphiceros neumanni, 152
subalpina, Cervicapra fulvorufula, 221
subulata, Antilope (Raphicerus), 147
sundevalli, Cephalophus melanorheus, 97
sundevalli, Cephalophus pygmæus, 97
swaynei, Bubalis, 12
swaynei, Bubalis tora, 12
swaynei, Madoqua, 176
Sylvicapra, 107
Sylvicapra abyssinica, 117
Sylvicapra abyssinica nyansæ, 118
Sylvicapra caffra, 108
Sylvicapra campbelliæ, 116
Sylvicapra coronata, 115
Sylvicapra coronata campbelliæ, 116
Sylvicapra frederici, 94
Sylvicapra grimmi, 108
Sylvicapra grimmi altivallis, 120
(Sylvicapra) grimmi, Cephalophus, 107
Sylvicapra grimmi roosevelti, 121
Sylvicapra grimmia, 86, 108, 115
Sylvicapra leucoprosopus, 121
(Sylvicapra)leucoprosopus,Cephalophus, 121
Sylvicapra madoqua, 117
Sylvicapra mergens, 108
Sylvicapra natalensis, 68
Sylvicapra ocularis, 113
Sylvicapra ogilbyi, 83
Sylvicapra philantomba, 94
Sylvicapra pygmæa, 101
Sylvicapra sylvicultrix, 64
sylvicultor, Cephalophus, 64
sylvicultor coxi, Cephalophus, 64
sylvicultrix, Antilope, 63
sylvicultrix, Antilope (Cephalophus), 63
sylvicultrix, Antilope (Grimmia), 63
sylvicultrix Cephalophus, 63
sylvicultrix, Sylvicapra, 64

taurina, Antilope, 54
taurinus albojubatus, Connochætes, 58
taurinus, Catoblepas, 54
taurinus, Connochætes, 54
taurinus, Connochætes taurinus, 56
taurinus, Gorgon, 55
taurinus hecki, Connochætes, 57
taurinus johnstoni, Connochætes, 57
taurinus (johnstoni) rufigianus, Connochætes, 57
taurinus typicus, Connochætes, 56
taurius, Connochætes, 55
taurius, Gorgon, 55
Terpone, 63
Terpone longiceps, 64, 66
(Terpone) longiceps, Antilope, 66
thikæ, Kobus ellipsiprymnus, 228
thomasi, Adenota, 264
thomasi, Adenota kob, 264
thomasi, Cephalophus, 64
thomasi, Cobus, 264

thomasi, Cobus (Adenota), 264
thomasi, Cobus coba, 264
thomasi, Kobus kob, 264
thomasi, Madoqua (Rhynchotragus), 191
thomasi, Rhynchotragus, 191
thomasinæ, Cervicapra, 205
thomasinæ, Redunca, 205
Tiang, 40, 43
tiang, Damalis, 42
tiang, Damaliscus, 42
tiang, Damaliscus corrigum, 43
tiang, Damaliscus korrigum, 42, 43
tiang-riel, Damalis, 42
tjæderi, Cobus defassa, 235
tjæderi, Kobus defassa, 235
Tohi, 217
tohi, Redunca redunca, 217
Tora, 9
tora, Alcelaphus, 8
tora, Bubalis, 8, 9, 11
tora, Bubalis tora, 10
tora digglei, Bubalis, 11
tora neumanni, Bubalis, 18
tora noacki, Bubalis, 13
tora rahatensis, Bubalis, 11
tora swaynei, Bubalis, 12
tora typica, Bubalis, 10
Tragelaphus hemprichii, 175
Tragelaphus madoqua, 117
Tragelaphus melanotis, 156
Tragelaphus mergens, 108
Tragelaphus montanus, 138
(Tragelaphus) ogilbyi, Antilope, 83
Tragelaphus oreotragus, 124
Tragelaphus pygmæus, 101
Tragelaphus tragulus, 147
Tragulus, 158
tragulus, Antilope, 146
tragulus, Calotragus, 147
tragulus grayi, Pediotragus, 147
Tragulus melanotis, 156
tragulus melanotis, Antilope, 156
tragulus, Nanotragus, 148
tragulus, Neotragus, 148
tragulus, Oreotragus, 147
(Tragulus) oreotragus, Antilope, 124
tragulus pallida, Antilope, 157
Tragulus pediotragus, 157
tragulus, Pediotragus, 147
Tragulus pygmæus, 101, 169
Tragulus rupestris, 147
tragulus rupestris, Antilope, 147
tragulus, Tragelaphus, 147
tschadensis, Bubalis lelwel, 20
tschadensis, Kobus defassa, 235
tschadensis, Kobus unctuosus, 235
Tsesebe, 38
typica, Bubalis lelwel, 20
typica, Bubalis tora, 10
typica, Cervicapra redunca, 213, 219
typica, Madoqua kirki, 188
typicus, Cephalophus melanorheus, 97
typicus, Cobus coba, 256
typicus, Cobus defassa, 238
typicus, Cobus vardoni, 269
typicus, Connochætes taurinus, 56
typicus, Nesotragus livingstonianus, 163
typicus, Oreotragus, 124
typicus, Oreotragus saltator, 126
typicus, Rhaphiceros campestris, 149

ubangiensis, Adenota kob, 259
ubangiensis, Kobus kob, 259
ugandæ, Cervicapra bohor, 220
ugandæ, Cobus defassa, 240
ugandæ, Kobus defassa, 240
ugandæ, Kobus unctuosus, 240
ugandæ, Redunca redunca, 220
unctuosa, Antilope, 241
unctuosa, Kobus, 242
unctuosa uwendensis, Kobus, 238
unctuosus, Cobus, 242
unctuosus, Cobus defassa, 242
unctuosus defassa, Cobus, 238
unctuosus, Kobus, 242
unctuosus, Kobus defassa, 241, 242
unctuosus matschiei, Kobus, 234
unctuosus tschadensis, Kobus, 235
unctuosus ugandæ, Kobus, 240
uwendensis, Kobus unctuosa, 238

Vaal Rhebok, 200
vardoni, Adenota, 268
vardoni, Antilope, 268
vardoni, Cobus, 268
vardoni, Eleotragus, 268
vardoni, Kobus, 268
vardoni, Kobus (Adenota), 268
vardoni, Kobus vardoni, 269
vardoni loderi, Cobus, 260
vardoni senganus, Cobus, 269

vardoni senganus, Kobus, 269
vardoni typicus, Cobus, 269
vardonii, Heleotragus, 268
variani, Madoqua damarensis, 185
variani, Rhynchotragus damarensis, 185
vaughani, Adenota [kob], 265
vaughani, Cobus, 265
vaughani, Kobus, 265
villosa, Antilope, 200
villosa, Antilope (Redunca), 200
villosus, Eleotragus, 200

walkeri, Cephalophus, 92
wardi, Cervicapra bohor, 214, 215
wardi, Cervicapra redunca, 215
wardi, Redunca redunca, 215
Wasserbok, 227
Waterbuck, 227
Western Kob, 256
weynsi, Cephalophus, 74
White-Bearded Gnu, 58
whitfieldi, Cephalophus, 94
Wildebeest, 52
wroughtoni, Madoqua guentheri, 193
wuil, Adenota, 267

Yellow-backed Duiker, 64

zanzibaricus, Cephalophorus, 160
zebra, Antilope, 89
zebra, Damalis, 89
zebra, Cephalophorus, 89
zebrata, Antilope, 89
zuluensis, Neotragus livingstonianus, 164
zuluensis, Nesotragus, 164
zuluensis, Nesotragus livingstonianus, 164

LONDON:
PRINTED BY WILLIAM CLOWES AND SONS, LIMITED,
DUKE STREET, STAMFORD STREET, S.E., AND GREAT WINDMILL STREET, W.

14 DAY USE
RETURN TO DESK FROM WHICH BORROWED
EARTH SCIENCES LIBRARY

This book is due on the last date stamped below, or on the date to which renewed.
Renewed books are subject to immediate recall.

LD 21–50*m*-6,'60
(B1321s10)476

General Library
University of California
Berkeley

808430

QL737
U4B7
v.2

MATTHEW
LIBRARY

UNIVERSITY OF CALIFORNIA LIBRARY